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BULLETIN OF THE HISTORY OF MEDICINE

ORGAN OF THE AMERICAN ASSOCIATION OF THE HISTORY OF MEDICINE
AND THE JOHNS HOPKINS INSTITUTE OF THE HISTORY OF MEDICINE

Founded by HENRY E. SIGERIST

Editor—OWSEI TEMKIN

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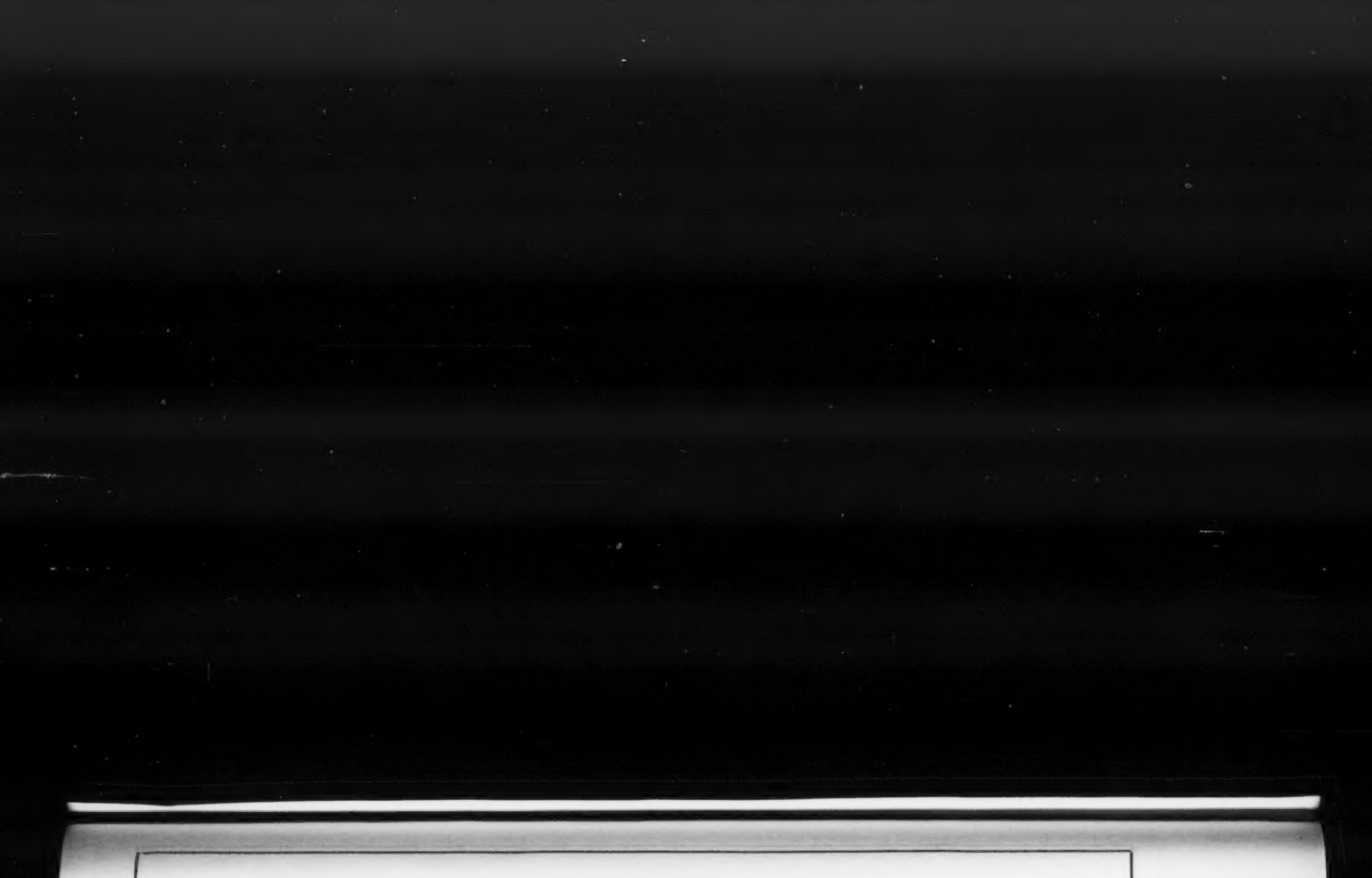

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THE PSYCHIATRY OF PARACELSUS *

IAGO GALDSTON

Offered in honour of the 70th birthday of Dr. Charles Singer

In his *Paracelsica* Carl Jung says of Paracelsus:

Man kann ihm nicht gerecht werden; man kann ihm immer nur unter- oder überschätzen, und darum ist man mit der eigenen Bemühung, wenigstens einen Teil seines Wesens genügend zu erfassen, stets unzufrienden.[1]

However, despite Jung's perspicacious and somewhat despairing comment, it is very timely to scrutinize the psychiatry of Paracelsus. This not solely because we have entered upon the Atomic Age and thus have realized in an egregious fashion the dream of the alchemist, but also because the atomic bomb has in a rude and compelling manner obliged the scientist to take cognizance of the meaning of life. For in the main, and with but very few exceptions, the scientist has been loath to deal

* An address delivered at the Boston Meeting of the History of Science Society, on Thursday, December 29, 1949.

[1] "One cannot do him justice: one can only under- or over-value him, and for that reason one is always dissatisfied with one's own efforts to fathom at least a part of his being." (C. G. Jung, *Paracelsica. Zwei Vorlesungen über den Arzt und Philosophen Theophrastus*, Zürich und Leipzig, 1942, p. 9.)

with meanings, and most of all with the meaning of life. With an almost arrogant pride the proverbial scientist proclaimed himself an agnostic in all such matters. His was the realm of the "how." The "why" he left to the philosophers and ethicists.

This disassociative process by which the knowledge of matter was divorced from that of meaning, began at the time of Paracelsus. He was among the last of that small number of learned men who attempted to amalgamate the ancient and modern learnings. As he was unsuccessful in his own time, so with the passage of time, he lost meaning for the successive generations of men who clung with increasing desperation to the mensurable data of science, and to whom all that was *unsichtbar* (imperceptible) was mysticism, and hence anathema. On the occasion of the four hundredth anniversary of his death, the Royal Society of Medicine heard this pronouncement on the personality, doctrines, and influence of Paracelsus:

> It cannot be said that the abusive rantings of Paracelsus contributed to the general progress of science and medicine that began in the sixteenth century, principally as to the outcome of the diffusion of accurate knowledge by means of printed books. For he was a rude, circuitous obscurantist, not a harbinger of light, knowledge and progress.[2]

A more sympathetic appreciation is that of Charles Singer, who, though he finds Paracelsus violent, dramatic and repellent, is still willing to allow that his "iconoclasm doubtless did something to deter men from the worship of the old idols."[3] With genial tolerance Singer takes note of the "general agreement among the learned and nebulous band of Paracelsists that their hero did indeed foreshadow the 'new instauration.'"[4] The learned and nebulous band of Paracelsists, however, deems this the lesser of the credits due their hero. Far more significant is his appreciation of the deficiencies, of the pits, and traps that beset the new learning. Paracelsus could not have been either the patron or the disciple of Bacon, though as befits the case, Bacon found something to praise in Paracelsus. Paracelsus was more than suspicious of the persuasion that real knowledge comes through the dismemberment of the whole into its constituent parts. Centuries before the term *holism*[5] was coined to connote to the

[2] H. P. Bayon, "Paracelsus: Personality, Doctrines and His Alleged Influence in the Reform of Medicine," *Proceedings Royal Soc. Med.*, 1942, vol. 35, part I, Session 1941-42, Nov.-Apr., pp. 69-76.

[3] Charles Singer, *From Magic to Science*, London, 1928, p. 105.

[4] Id., *ibid.*

[5] "It is quite obvious for any impartial student that Paracelsus was remote from the

learned the quality of the whole derived from wholeness, and which is greater than that derived from the sum of its parts, and long before *Gestalt* was applied to denote a psychological concept and to label a school of thought, Paracelsus espoused both thoughts in his criticisms of *der todten Anatomie*. "In der todten Anatomie werdet ihr weder Natur noch Wesen erkennen," wrote Paracelsus. "In the anatomy of the dead you will discern neither nature nor being. Basically it is of no value (that is, in understanding what goes on inside the living body). Essence, uniqueness, quality (*Eigenschaft*), being and strength, that which is the highest in anatomy, is dead. This has not been dealt with as yet for it is common practice to disregard the best. But it is the living body that teaches the anatomist (the physician) health and disease, not the dead one: he requires therefore a living anatomy." [6]

This persuasion, this conviction that only the living scene in all its multiform parts and in its innumerable inter-relations and inter-reactions, can provide some measure of understanding to those who are concerned with well-being and illness, in body and in mind, characterizes and distinguishes the whole of Paracelsus' thinking. This is in essence his challenge to the past and his exhortation to the future. In this light is his preoccupation with the macrocosm and microcosm to be understood. It is this insight that makes his psychiatry so very modern in spirit and viewpoint. "Er ist nicht veraltet, sondern wächst mit der weiterlaufenden Zeit." [7] For if modern psychiatry is distinguished in any respect, it is in its integrative character, in its willingness and competence to perceive man in relation to the whole world about him. The spokesmen of modern psychiatry do not employ the terms macrocosm and microcosm, but the essence of what is involved and implied in these terms is reflected in both

attitude, methods and outlook of the modern scientist, i. e. the investigator of causality in the modern sense. Van Helmont definitely followed the ideal of the modern scientist, with no little success. Nevertheless, van Helmont realized the paramount importance of entities which are not accessible to causal analysis, especially in Biology, and subscribed, true to Paracelsus' tradition, to "Wholism,' 'Thinking in Analogies' and Symbolism." (Walter Pagel, *The Religious and Philosophical Aspects of van Helmont's Science and Medicine*, Baltimore, 1944, p. 2 [Supplements to the Bull. Hist. Med., 2]).

[6] "In der todten Anatomie werdet ihr weder Natur noch Wesen erkennen. Nutzt inwendig gar nichts. Essentia, Eigenschaft, Wesen und Kraft, so ist das höchst der Anatomie; ist abgestorben. Die ist bisher noch nicht tractirt worden; denn es ist gemeiner Brauch, das Beste wegzulassen. Aber der lebendige Leib ist es, der Gesundheit und Krankheit anatomatiziren lässt, nicht der todte; er fordert daher eine lebendige Anatomie." (Paracelsus, *Grosse Chirurgie*, III. pp. 259-261).

[7] "He has not become antiquated, but rather has grown with time." (Dr. R. Koch and Prof. Dr. E. Rosenstock, *Paracelsus, Krankheit und Glaube*, Stuttgart, 1923, p. 5).

their criticisms and avowals. Adolf Meyer, speaking to the theme "The Contributions of Psychiatry to the Understanding of Life Problems," said, "The human organism can never exist without its setting in the world. All we are and do is of the world and in the world. The great mistake of an overambitious science has been the desire to study man altogether as a mere sum of parts, if possible, of atoms, or now of electrons, and as a machine, detached, by itself, because at least some points in the simpler sciences could be studied to the best advantage with this method of the so-called elementalist. It was a long time before willingness to see the large groups of facts, in their broad relations as well as in their inner structure, finally gave us the concept and vision of integration which now fits man as a live unit and transformer of energy into the world of fact and makes him frankly a consciously integrated psychobiological individual and member of a social group." [8]

Paracelsus had written "Der Mensch ist eine kleine Welt, ein Auszug aus der ganzen machina mundi. Im Menschen sind alle Eigenschaften der Welt in eins." [9]

It is precisely this ample understanding of the little world within the great world, together with all its vast implications, that renders Paracelsus outstanding among psychiatric pioneers. With justice Jung sees in Paracelsus "einen Bahnbrecher nicht nur der chemischen Medizin, sondern auch der empirischen Psychologie und der psychologischen Heilkunde. Er hat . . . in seiner Art die seelischen Phänomene in Betracht gezogen, wie wohl keiner der grossen Aerzte vor oder nach ihm." [10]

The most common source of psychological conflict, the most common cause of psychopathology, is the emotional dissonance between man and the world he lives in. When the individual and the society in which he lives are not in psychological harmony, the individual is likely to become sick.[11] The psychoanalyst will describe this as a conflict between the

[8] Dr. Adolf Meyer, "The Contributions of Psychiatry to the Understanding of Life Problems," in *A Psychiatric Milestone*, New York, 1921, p. 25.

[9] "Man is a small world (a microcosm) an extract of the whole *machina mundi*. In men are embodied all the qualities of the world." (Paracelsus, *Astronomia Magna*).

[10] "A trailblazer not only in medicinal chemistry but also in empirical psychology and psychotherapy. In his own way he took the phenomena of the soul into consideration, as none of the great physcians had done before him or after him." (C. G. Jung, *op. cit.*, pp. 177, 128).

[11] Dr. E. Jones, *Social Aspects of Psycho-Analysis*. Lectures delivered under the Auspices of the Sociological Society. London, 1924, p. 6. "The pathological states to which psycho-analysts have devoted most attention, the various disorders known as neuroses are themselves not so much diseases in the ordinary sense as forms of individual reaction to social situations, problems and difficulties."

Id and the *Super-ego,* or as between the primitive drives and the endogenous as well as the exogenous inhibitions. This formulation is fundamental to modern psychiatry and is shared by practically all schools. Paracelsus knew neither the *Id* nor the *Super-ego,* but he did know that those are sick in spirit in whom that which is *mortal* and that which is *immortal,* that which is *intelligent* and that which is *unintelligent,* are not compounded in the appropriate proportions and strengths.[12] He saw man as an amalgam of the divine and the mortal. With superb insight and with comparable vigor Paracelsus expounded his understanding of the human psyche. It is not possible, at least not for me, to translate his words so as to transmit even a modicum of their vigor and beauty. In the original one hears the overtones of his earnestness, of his fullness, of his eagerness. His words mirror a man of strength and conviction; a man too full of the consciousness of what he needs must say, to be halted or gainsaid. "Fleissig ist ein Aufmerkung zu haben auf die Geist der Menschen, dieweil ihr zween seind, die ihm angeboren anliegen." [13] Rendered freely, the author counsels a diligent observation on the spirit (*Geist*) of man,—"the which is composed of two parts, both of which are native to him. For man should live in the spirit of life and be a man, and should not live according to the spirit of Limbus (the primitive-primeval-chaotic) that will make of him an unintelligent creature. For it is indeed true that man is made in the image of God, and so he has a godly spirit in him. But then he is otherwise (*sonst*) an animal and as such has an animal spirit; these two are antagonistic, and yet, however, the one must mollify the other. Therefore, man should not be a beast, but a man; to be a man, he must live in the spirit of life, of human life, and suppress *(hinwegtun)* the animal spirit *(viehischen Geist.)* Therefore it is necessary to recognize both of the spirits, on the basis of which the true spirit of man is distinguished from that of the animals." [14]

In the book *Krankheiten so der Vernunft berauben,* Paracelsus describes and distinguishes between different forms of psychopathy, including also the psychoneuroses. "Viel seind die solch lunatisch Krankheit tragen, deren nicht geacht wird lunatisch zu sein. Denn vielerlei seind Narren,

[12] J. Huser, *Die Bücher und Schriften des . . . Paracelsi,* 10 vols., Basel, 1589-91, vol. IX, 1, 2.

[13] *Ibid.*

[14] "Das seind nun zwei widerwärtige, jedoch aber eins muss dem andern weichen. Nun soll der Mensch kein Tier sein, sondern ein Mensch: Soll er nun ein Mensch sein, so muss er aus dem Geist des Lebens des Menschenleben, und also hinwegtun den viehischen Geist. Nun ist not die zween Geist zu erkennen, auf dass der recht Geist des Menschen unterscheiden werde vor dem tierischen." (*Ibid.*)

so seind auch vielerlei toub Leut, nicht ein Art, nit auf ein Weg, sondern in viel Weg, in viel Art, in viel Gestalt, und Form." [15] " Many are those who are ill who are not thought to be mentally sick *(lunatisch)*. For as fools (simpletons, feeble-minded) are of many kinds, so also are there many kinds of crazy people *(toub Leut)* not of one sort, nor in one way, but in many ways, of many sorts, in many patterns and forms."

Paracelsus distinguishes clearly between the feeble-minded and the psychopathic *(die Narren und die Touben)*. The former, he says, are born simple in mind, whereas the psychopathic are not born psychopathic. The feeble-minded behave in the wise of an intelligent animal, but the psychopathic in the manner of the irrational *(unsinnige tierische Geist)* animal. To illustrate his meaning, Paracelsus draws upon the analogy of a dog which, while healthy, barks and bites, but does so with the true intelligence of the dog. The feeble-minded may be said to behave in the way of the healthy animal. But the psychopathic behave like a dog deprived of its intelligence, in other words, like a mad dog, for they "bite everyone and rage" *(wütet in alle Tiere)*.

Under the caption of *Wahnsinn,* Paracelsus describes mania, of which he recognizes two kinds, that which "springs up" in the healthy body and that which is engendered by other sickness. The periodicity and self-limiting character of the disorder he describes, as well as the tendency of its sufferers to recover spontaneously, make it evident that Paracelsus recognized what we call today manic-depressive psychosis. Paracelsus furthermore includes under the heading *Wahnsinn* four classes of disorders, which he describes as major psychoses,—" die da allzeit bei unsinnigen und unvernünftigen Leben sind." [16] These he names *Lunatici, Insani, Vesani, Melancholici.* It is not possible, the circumstances being unfavorable, to deal in particular with these four classes of disorders. It is, however, important, since Paracelsus is suspect to the uninformed, to

[15] *Ibid.*

[16] *Ibid.*, pp. 45, 62. " Those who are permanently afflicted with an insane and unintelligent way of life."

" Also auch von der *Mania* geredt soll werden, die da ist allein ein Veränderung der Vernunft, und nit der Sinnen: Denn ihnen ist das Sinnen mit Gewalt eingebildet, und aber die Vernunft in ihnen garnichts ist. Und *Mania* kommt in der Gestalt, mit toben und unsinniger Weis, nimmer kein Ruh, viel Unglücks machen, und wird erkennet durch das, dass sie von ihnen selbst wieder nachlassen und aufhören, und zu der Vernunft wieder kommen. Und wiewohl das ist, dass *Mania* viel mal kommt nach dem und sie auch viel hinweg gehet und etlich ist, die nach ihren Hinweggehn nimmer wieder kommt. Etlich nach dem Mond zufällig ist, etlich nach dem äussern Accidenten sich bewegen. So ist der Manien zwei Geschlecht: Eins, so von gesundem Leibe entspringt, und eins, so von andern Krankheiten erwachset."

underscore the objective and scientific views held by Paracelsus on the origin and causation of the psychiatric disorders which he describes. "Wir erkennen in den Krankheiten, so der Vernunft berauben, durch Experientirung, dass sie aus der Natur entspringen und kommen." [17] "We recognize by experience that the diseases which deprive man of his reason originate and come out of nature (are natural in origin)." In this passage Paracelsus furthermore mocks the priestly clan *(die Götterischen Verweser)* who ascribe such diseases to incorporeal creatures *(uncorporalischen Geschöpfen)* and diabolical spirits. To this belief he will not subscribe, for experience shows that the disorders have their origin in nature.[18]

Nor does Paracelsus prove any less objective and scientific in his approach to psychotherapy. Indeed, he was a psychosomaticist (with apologies for the term)[19] centuries before the concept was reborn and rechristened. Among the general causations of disease he lists as one the *Ens Spirituale*, which can be equated to the psychological factors of disease, somatic as well as psychological. In the section dealing with the effects of the *Ens Spirituale* Paracelsus writes: "Now, then, you should observe and we point out to you that conscience overcomes the guilty one: Similar are the effects of envy and hatred. And we have indicated this to you, so that you should understand, how the *Ens Spirituale* so powerfully reigns over the body, that therefore many sicknesses, and all of the kinds of the sicknesses of men can be brought on; therefore you should apply treatment not as in ordinary diseases, but you should treat the spirit (psyche), for it is the spirit that here lies sick." [20]

Paracelsus dwelt much on the effects of will and imagination on the human body. "You should know," he wrote, "that the effect of the will is of major importance in medicine. For one who does not mean well with himself, and is hateful to himself, it is possible that such a person may be afflicted by the very curse he utters against himself. For cursing derives

[17] *Ibid.*, vol. IX, "Das siebente Buch in der Arzenei. *De Morbis Amentium*, das ist von den Krankheiten, die den Menschen der Vernunft berauben." Pp. 38-92.

[18] *Ibid.*

[19] Vide "Biodynamic Medicine versus Psychosomatic Medicine." *Bull. Menninger Clinic*, 8, 4, July 1944.

[20] "Also wie wir euch anzeigen, sollet ihr merken, dass die Geist den Schuldigen gewältigen: Dergleichen auch die Wirkung verbringen des Neids und Hass. Und haben euch das darumb angezeigt, dass ihr verstehen sollet, wie das *Ens Spirituale* so gewaltiglich herrschet über die Leib, dass also viel Krankheiten, und alle Geschlecht der Krankheiten dem Menschen mögen zugefügt werden: Daraufhin nit sollet Arzney brauchen als auf natürlich Krankheiten, sondern ihr sollt den Geist arzneyen, derselbig ist der, der da krank liegt." (J. Huser, *loc. cit.*, vol. I, p. 54).

from the obfuscation *(Verhängung)* of the spirit. And it is also possible that the representations are by curses converted into sickness, into fevers, convulsive seizures, apoplexies, and such like so that they are brought about as indicated above." [21] And with a warning no less timely today than when it was written, Paracelsus continues: "And let this not be a jest to you, you physicians: you know not in the least part the power of the will; for the will is the genetrix of such spirits as the prudent will have no dealings with." [22]

"Great, too, is the power of belief and of faith, for," wrote Paracelsus, "belief is of itself capable to make every sort of herb! An invisible nettle, an invisible celandine (balsam), an invisible trioll: and therefore everything that grows in terrestrial nature the power of belief can likewise bring: therefore the power of belief can likewise create every sickness" [23]

Faith, belief, will, and the passion account in the psychiatry of Paracelsus for many of the ills, and for some of the cures, witnessed in men. Paracelsus is particularly concerned with what we today term the primitive drives, and with the anti-social impulsions. He refers to these components of the human personality as "*das Viehische im Menschen*,"—the brute, beast, or animal in men. To the predominance of these he traces the psychological ills in man. Furthermore, he maintains, in a passage of deep and subtle insight, that "the human intelligence does not become mad, and is not subject to sickness. Hence it is of no profit to search in the human spirit; only in his brute intelligence, therein, reader, peruse. For it is a major achievement to understand the rantings of the lunatic. . . ." [24]

It is only in recent times and largely through the illumination cast upon

[21] "Aber ihr sollt wissen in euch, dass die Wirkung des Willens ein grosser Punct ist zu der Arzney. Denn einer der ihm selbst nichts Guts gönnet, und ihm selbst hass ist, ist möglich, dass das, so er ihm selbst flucht, ankommt: Denn fluchen kommt aus Verhängung des Geists. Und ist auch also möglich, dass die Bilder verflucht werden in Krankheiten, zu Febern, Epilepsien, Apoplexien, und dergleichen, so sie gemacht sind, wie oben stehet." (*Ibid.*, vol. I, p. 53).

[22] "Und lasset euch das kein Scherz sein ihr Aerzte: Ihr wisset die Kraft des Willens nit den mindsten Teil: Denn der Will ist ein Gebärerin solcher Geisten, mit welchen der Vernünftig nichts zu schaffen hat." (*Ibid.*, vol. I, p. 53.)

[23] "Denn der Glaub vermag in ihm selbst alle Geschlecht der Kräuter zu machen, ein unsichtbare Nessel, ein unsichtbar Schölkraut, ein unsichtbar Trioll: Und also ein jedlich Ding das in der irdischen Natur wachst, das vermag auch die Stärk des Glaubens zu bringen: Also vermag auch der Glaub alle Krankheiten zu machen." (*Ibid.*, vol. I, p. 251).

[24] "Denn die menschlich Vernunft wird nicht toub, empfächt auch kein Krankheit. Darum ist in derselbigen Menschen Geist nichts zu suchen, allein in seiner tierischen Vernunft, dieselbig, Leser, durchlies. Denn es ist ein grosses, den touben Wüterich zu verstehn, er ist nicht minder denn ein wütender Hund." (*Ibid.*, vol. IX, pp. 1, 2.)

these matters by Freud and his co-workers that we have come to appreciate the possibility of understanding the " rantings of the lunatic," and indeed it is " a major achievement." So, too, have we learned to understand the " logicalness " of the paranoid and of the other psychopathological reasoning processes. The premises and conjunctions are at fault, but the deductions are keenly logical.

It is appropriate at this point to touch upon Paracelsus' use of the magnet in the treatment of somatic ailments, for this bears not only on the influence of the imagination, but is the derivative starting point of modern psychiatry. The magnet, magnetism, mesmerism, hypnotism, suggestion, psychocatharsis, and psychoanalysis, represent a series of stages in the progressive development of modern psychiatric thought and knowledge. The initial impulse to this development came from Paracelsus.

There is no indication that Paracelsus ascribed the influence of the magnet in the treatment of disease to any other quality than the *virtus attractiva macro- et microcosmi.* Imagination, faith, suggestion, did not enter into his account of the powers and operations of the magnet as *specific and separate factors.* Paracelsus was not handicapped by the dichotomy of body and soul which has plagued both philosophy and psychiatry since the advent of the Cartesian science.[25] Paracelsus could not have been guilty of such irrationalities as were uttered by the Commission of the French Academy of Science in its report on Mesmerism: "*L'imagination fait tout: le magnetisme nul.*" It was quite sufficient for him to state the rationale of magnetic cures in simple and self-evident terms: " For in the last analysis it is thus, that we contain within ourselves as many natural powers as heaven and earth possess. Can the magnet draw the iron to itself even though it appears to be a dead thing: so, too, can the dead person draw the living one to himself. Do the climbing vines reach out to the sun, so too well may man in similar manner have access to the sun. Can the planets draw one according to their wishes, so too can the dead body (i. e. the magnet). These are all invisible works, and yet they are natural.[26]

[25] Vide Iago Galdston, " Descartes and Modern Psychiatric Thought," *Isis,* no. 100 (Spring 1944), pp. 118-128.

[26] " Denn endlich ist das also, dass wir in uns haben so viel natürlicher Kräfte, als Himmel und Erden vermögen. Kann der Magnet das Eisen an sich ziehen, und scheint do wie ein tot Ding: So kann auch der tote Mensch den lebendigen an sich ziehen. Gehen die Bettler der Sonnen zu, so mag auch wohl ein Mensch dermassen ein Zugang haben. Können die Planeten einen ziehen nach ihrem Gefallen, so kann auch der tot Cörper dasselb. Das seind alles unsichtbare Werk, und doch natürlich." (J. Huser, *loc. cit.* vol. I, pp. 297, 298).

Paracelsus was fully cognizant of the existence of both folly and superstition, but he would not grant the existence of both natural and unnatural. Had he been confronted with this paradox, Paracelsus would have responded: "the natural embraces all else." [27] With keen insight and as if he were anticipating the criticism of later generations, Paracelsus stated: "No instructed person ever remained misled, him no one has ever seen superstitious. Where is superstition? Indeed, among those that understand nothing. Where is arrogance? But only among those who know nothing. Where is folly? But only among those content in their wisdom and who will seek no further in God's wisdom. And therefore when such an art is expounded and in their thick skulls they cannot fathom it, it must perforce be of the devil and magical." [28]

Paracelsus recognized the existence of the devil but also that far too much was credited to his works. "Ere the world comes to an end, many arts now ascribed to the work of the devil must become revealed, and it will then be evident, that most of these effects depend upon natural forces." [29]

It is not possible here to deal amply with the so-called demonology of Paracelsus. Yet it would help to understand *his* devil if we equated him to the *death instinct* of Freud. Between the two there is much in common. Both are destructive forces—the one stands opposed to Eros, the other to God. Jung, who among the contemporary psychiatrists is best equipped to fathom and to interpret the demonology of Paracelsus, astutely observes: "For us, the so-called moderns, his Homunculi, Trarames, Durdales, Nymphs, Melusine, etc. are certainly close to the crassest of superstitions, but for his time, not at all. These figures were still alive and effective in those times. They were indeed projections; but even of this he had some appreciation, in that, as is evidenced by many passages, he ascribed the origin of the Homunculi and other apparitions to imagination. His primitive perspectives led him to endow the projection with a reality which,

[27] Goethe's Essay on Nature and its profound effect on Freud.

[28] "Kein wissender Mann ist nie in Verführung blieben, ihn hat auch niemand aberglaubig gesehen. Wo ist der Aberglauben? Doch bei denen die nichts verstohn: Wo ist die Hoffart? Als allein bei denen, die in ihren Weisheiten bleiben, und weiter in Gottes Weisheit nit fahren. Und darum so eine Kunst geoffenbart wird, und sie in ihrem dollen Schädel nit mag unergründet werden, so muss sie teufelisch und zauberisch sein." (J. Huser, *loc. cit.*, vol. I, pp. 317, 318).

[29] "Ehe die Welt untergeht, müssen noch viele Künste, die man sonst der Wirkung des Teufels zuschrieb, offenbar werden, und man wird alsdann einsehen, dass die meisten dieser Wirkungen von natürlichen Kräften abhängen." (Quoted in M. B. Lessing. *Handbuch der Geschichte der Medizin*, Berlin, 1938, p. 366).

in the light of psychological effects, was far more warranted than is our rationalistic presupposition on the absolute unreality of the projected content." [30]

Paracelsus was not a mystic in the true sense of the word. He mystifies us today, but that is largely because our culture has lost the essential skill for dealing with the problems of being in the encompassing manner that was common to his age, and of which he was a master. And here it is pertinent to observe that Paracelsus was not a psychiatrist in the definitive sense of the term. Indeed he probably would have considered such specialization a degradation both of the physician's position and of his obligations. He dealt with mental illness. He studied experience and evolved a classification of the disorders and a rationale of psychopathology. It is proper, therefore, to speak of the psychiatry of Paracelsus. But he nowhere appears to have visualized the specialty of psychiatry. This observation is pertinent to the fact that much of his best psychiatric insight and understanding is revealed in those of his works which do not deal by title or otherwise with psychiatric disorders. It is, for example, most interesting to see how much psychiatric wisdom enters into his writings on "the female." "Darumb so ist Frau ein ander *Subjectum* denn der Mann.[31] Denn ihr Wurzen dienet zu der Nahrung: Des Mannes stehet still im Mann." "Therefore, is woman a different subject from man. For her roots serve to nourish; the man's remain fixed in man." Woman is the "smallest world" and is quite different from the microcosm-man, "has a different anatomy, *Theoricam, Causas, Rationes, Curas.* And no matter how much like man in many illnesses, yet it is for the physician to distinguish from the other, that is, from man, for she is a different world." [32]

[30] "Seine Homunculi, Trarames, Durdales, Nymphen, Melusinen usw. sind zwar zunächst krassester Aberglaube für uns sogenannt Moderne, für seine Zeit aber keineswegs. Diese Figuren lebten und wirkten noch in jenen Zeiten. Es waren zwar Projektionen; aber auch davon hatte er eine Ahnung, indem er, wie aus zahlreichen Stellen hervorgeht, um die Entstehung der Homunculi und sonstigem Spuk aus der Imagination wusste. Seine primitivere Anschauung schrieb den Projektionen eine Realität zu, welche deren psychologischer Wirkung um vieles gerechter wurde als unsere rationalistische Voraussetzung der absoluten Unwirklichkeit projizierter Inhalte." (C. G. Jung, *loc. cit.*, pp. 128, 129).

[31] J. Huser, *loc. cit.*, vol. I, pp. 194, 195.

[32] "Die Frau hat im selbigen ein Gebresten, sie ist die kleineste Welt, und ist ein anders dann der Mann, und hat seine andere Anatomey, *Theoricam, Causas, Rationes, Curas:* Und aber, wiewohl gleich in viel Krankheiten mit dem Mann, das ist aber dem Arzt zu unterscheiden von einander, das ist, vom Mann, denn sie ist ein andere Welt." (*Ibid.*, vol. I, p. 1900).

Paracelsus evaluates quite fully the role of the procreative function in shaping the physical, the psychological, the nosological, and the psychopathological, constitution of the female. But there was nothing of the misogynist in Paracelsus; on the contrary, he prized the "female of the species." "Wer kann einer Frauen Feind sein, sie sei gleich wie sie woll?" "Who can be an enemy of woman, be she as she will. For it is with her fruits that the world is settled, therefore God grants her long life, even though she were a shrew."[33]

Jung, in his account of the inner personality of Paracelsus, lays much weight upon the fact that Paracelsus was bereft of his mother at the age of nine. This traumatic experience, together with the fact that his father never remarried and remained for many years his son's teacher and companion, undoubtedly did have a profound influence upon Paracelsus' attitude toward womankind.

Perhaps the richest psychiatric yield is to be derived from those of Paracelsus' writings which are concerned with the immortal, the cosmic, the godly, phases of the human being. Here we are confronted not only with the equivalent of the *Super-ego* of modern psychiatry, but we witness also the appreciation which Paracelsus had of the Unconscious, and what in present-day terms is called the phylogenetic components of the psyche.

All of this was not known to Paracelsus, nor yet was it mysterious. It was logically deduced by Paracelsus from his cosmological premises (the relations of macro- to microcosm), and intuitively appreciated. There was a deep impulsion operative in Paracelsus to be concerned with such unsettled and undetermined matters, an impulsion which the present generation can well appreciate. "The physician should talk of (treat and be concerned with) the invisible (imperceptible) and know the perceptible."[34] "He who knows the imperceptible, is a physician, the imperceptible that which has no name, that which is without substance (insubstantial) and yet has effect."[35] Paracelsus is deeply concerned with the double nature of man, with his temporality and with his timeless ties to all the universe, with his substantiality and with his immaterial effects upon the universe. He experienced no difficulties in visualising in what manner this double nature of man could serve to account for health and for illness. In all this

[33] "Wer kann einer Frauen Feind sein, sie sei gleich wie sie woll? Denn mit ihren Früchten wird die Welt besetzt, darumb Sie Gott lang leben lässt, ob sie gleich gar ein Gall wäre." (*Ibid.*, vol. I, p. 309).

[34] "Von dem nun, das unsichtbar ist, soll der Arzt reden, und das sichtbar ist, soll ihm in Wissen stehen. . . ." (*Ibid.*, vol. II, p. 138).

[35] "Der ist ein Arzt, der das unsichtbare weiss, das kein Namen hat, das kein Materie hat, und hat doch sein Wirkung." (*Ibid.*).

he was neither slavish nor fatalistic. The macrocosm rules the microcosm, but the relation is reciprocal. As the Greeks taught that "character is destiny," so Paracelsus taught "Der Charakter des Menschen meistert das Gestern."—("The character of man masters the stars").

The whole of Paracelsus' teachings sums up to an effort to perceive and understand man in his physiological and psychological functions, within the framework of nature and the universe, from which he is not set apart, but of which he is rather a component.

Of the Paracelsian treatment of psychic disorders, there is little that needs to be said. His therapy is founded on and conforms to his understanding of the etiology of the disorders. Some have stressed the odd and the bizarre in the Parcelsian therapy, but it can be easily demonstrated that such writers either fail to understand or misconstrue the intent of the treatment they criticize. Bloodletting seems barbaric to us, yet in the instance of mania with much agitation is it any less "barbaric" to achieve sedation by means of the barbiturates than by bloodletting? Paracelsus advised drilling holes in the patient's skull to let out mania. Is prefrontal leucotomy any less or more rational a procedure? It is, however, not the gross and violent therapeutic procedures advocated by Paracelsus, but his more sedate, basic, common ones that deserve notice. Paracelsus believed in psychotherapy, in the manner practiced today. He believed in persuasion, exhortation, instruction, fasting, and prayer. He set great value on the therapeutic effects of sleep and advised the use of somnifacients. He believed in the self-healing powers of the soul, *die Heilkraft der Seele*. The violent and hopelessly insane he advised should be incarcerated. In relation to this, it should be borne in mind that Paracelsus firmly believed that every disease was curable, and also that compassion was the physician's crowning gift and virtue. "*Barmherzigkeit ist ein Schulmeister der Artzten.*"

Coming to the end of this brief sketch on the psychiatry of Parcelsus, I can attest to the validity of Jung's words. "Man ist mit der eigenen Bemühung, wenigstens einen Teil seines Wesens genügend zu erfassen, stets unzufrieden." How can one be satisfied when the subject is so vast and the man unfathomable, *unerschöpflich*, inexhaustible? Then, too, there is the tantalizing problem of one's interest in Paracelsus, which is never academic, but always freighted with emotions and barbed with psychological implications. My own interest is never in the direction of modernizing Paracelsus. He was, is, and ever will remain, man of the Sixteenth Century. Nor would I be a follower of that fatuous sport that scans the

past for precursors of Freud. To that motley crew of historical scavengers, someone, somehow, should make clear that all the past and all the past holds of men, things, and thought, are precursors to every man that follows in the chain of unfolding generations. My interest in Paracelsus has its different roots. It arises out of the appreciation that in his *Anschauung,* in the embrace of his thoughts, there is much that has meaning and inspiration for us today. We have come around the bend and completed the circle. Once again we can contemplate heaven and earth, man and the firmaments, within one intelligible framework.

Yet there are those who will not agree. On that score only this need be said. Many among us, confronted with the eternity that is within us, (that which Paracelsus termed *unsichtbar*), are frightened, and in their fear, deny what they beheld, and berate those who lifted the curtain.

Finally, I have dealt with the psychiatry of Paracelsus, because it is psychiatry which, I believe, has taught us and will continue to teach us to understand and to prize the eternal, the unfathomable, and *das Unsichtbare* in man.

OLD PARR

WILLIAM J. FORD

Thomas Parr, called Old Parr, has been for more than three hundred years a symbol of longevity in the English-speaking world. He is said to have lived from 1483 to 1635, attaining the age of 152 years. Some credence, some atmosphere of science was lent to Parr's life because William Harvey performed an autopsy upon his body and left an account of that examination and of Parr's life in "Anatomia Thomae Parri." Modern literature paid tribute to Parr when James Joyce referred to him on the opening page of *Finnegans Wake*, including him in the real and legendary persons whose lives were memorable for a fall, Adam, Humpty Dumpty, Finnegan of the song, and Earwicker, the dreaming hero of the novel, who symbolizes mankind.

The indisputable facts are few. In 1635, while visiting in Shropshire, Thomas, Earl of Arundel, Earl Marshal of England, encountered an old man who was said to be 152 years old. At his expense, the Earl of Arundel brought Thomas Parr back to London, where he became the center of interest. He was received by King Charles, destined to be beheaded 14 years later. The old man survived the luxurious living of the city a few months and died on November 14; the king ordered William Harvey, who was personal physician to the king and to the Earl of Arundel, to perform an autopsy. This autopsy, according to the Harvey report, was performed on the 16th of November, in the presence of other physicians. The body of Thomas Parr was buried in the south transept of Westminster Abbey, with an inscription relating that he lived in the reigns of ten kings and queens of England.

Even about these facts there is some dispute. In the matter of dates of death and burial, William Harvey's have been given preference. So far as the tombstone itself is concerned as a link in Parr's history, the antiquary W. J. Thoms learned that the inscription was re-engraved in the middle of the 19th century. Thoms, however, and another student of longevity, Sir G. C. Lewis, reject tombstone evidence, even when the original engraving is available.

Few present day reference books seriously question Thomas Parr's attained age, either regarding it as too obviously folklore to be examined critically or accepting the dates 1483-1635 as true. Wilson in his

Wonderful Characters, 1834, regarded John Taylor's account " as almost the only work of authenticity." This work, part prose, part verse, has ingenuousness, robustness and the vigor of our American folk-ballads. If it seemed authentic to Wilson, two hundred years after the events related, perhaps the 20th century ought not to insist on the aura of scientific truth.

Taylor's title follows: " *The Old, Old, Very Old Man;* Or the Age and Long Life of Thomas Parr, the Son of John Parr, of Winnington, in the Parish of Alberbury, in the County of Salop, or Shropshire, Who was Born in the Reign of King Edward the Fourth, and is now Living in the Strand, Being Aged One Hundred and Fifty-two Years and Odd Months; His Manner of Life and Conversation in so Long a Pilgrimage; His Marriages, and His Bringing up to London about the End of September Last, 1635." This book was written just prior to Parr's death and upon it has been based much of the belief of future writers in the facts as they were seen by Parr himself and his Shropshire neighbors. In fact, Taylor's reference in two places to " certificates " proving Parr's age, caused antiquary labor two centuries later in search of them. It is an interesting tale, although the verse wanders much in banal, pseudo-philosophical discussions. It must be pointed out that if Taylor's contemporaries did not have the advantages of later scientific standards, they had had the finest Elizabethan poets to set high literary standards.

The Story Of Old Tom Parr

Thomas Parr is said to have been born in Shropshire, as John Taylor's title indicates, in 1483, as the Wars of the Roses (1455-1485) were drawing to a close. At 17 he is said to have gone into service as husbandman. After 18 years he leased a farm for himself. This farm he leased from three generations of owners, and at the age of 102, took a lease " for life," which turned out to be a sharp deal since, to the landlord's chagrin, he lived fifty years more. " A bachelor he tarried " sang Taylor in verse, until the age of 80, at which time he married his first wife, Jane Taylor. The children of this union, which lasted 32 years, died in infancy. During this marriage, Parr met " fair Katherine Milton" who became his mistress, Parr being at this time 105 years old. Some legends say he had a bastard child by Katherine Milton. At any rate, his transgression was found out and he did penance in the church at Alberbury by standing before the congregation in a white sheet. This event, in 1588, is found in most of the versions of Parr's life and it formed the topic of his recorded conversation with King Charles.

Parr's second wife was said to have been Jane Adda, whom he married in 1605, after being ten years a widower. Thomas Parr was then 122 years old. In justice to the wealth of legends, it must be reported that Henry Wilson found one author who stated that Parr married Katherine Milton and got her with child, in lawful wedlock. This chaste version is inconsistent with important events in the story and William Harvey, who was a contemporary, accepted the version which held that Katherine Milton was not Parr's wife, and that he did penance publicly for this extramarital affair. W. J. Thoms, in synopsizing Parr's life, indicates that many plainly false legends grew up about Parr's children and grandchildren attaining advanced ages. Thoms believed that Parr had no descendants but he offered the reader no information about the alleged child of Miss Milton.

Thomas Parr's quiet life in Shropshire was interrupted in 1635 by the well-meaning Earl of Arundel and he was removed to London. From that time on, his life becomes factual. The striking thing is that William Harvey and others of the time accepted Thomas Parr's age as 152 and that for two centuries the story went undisputed.

William Harvey's *Anatomy Of Thomas Parr*

That Dr. Harvey's acceptance of the Parr longevity lent undeserved credence to the fable is beyond question. Does any loophole exist which would suggest that William Harvey might have maintained toward this the same questioning attitude that makes him a respected physician and biologist?

Harvey's " Anatomia Thomae Parri," as published in the *Opera omnia* was translated into English and included in the 1847 *Works of Harvey* as " The Anatomical Examination of the Body of Thomas Parr."

The history of the Parr manuscript is identically recorded in the works of Harvey translated by Robert Willis in 1847 and in Keynes' *Bibliography of the Writings of Harvey*. The Parr manuscript was not published, say these authors who do not question its authenticity, during Harvey's lifetime (1578-1657). This is true although he lived for twenty two years after the famous autopsy on Thomas Parr's body. It will be recalled that Harvey was physician to the king and to Arundel. What is known about the manuscript is that a nephew, Michael Harvey, gave the manuscript to Dr. John Betts. Betts first published the Parr autopsy in 1669, including it in a work of his own, *De Ortu et Natura Sanguinis*, where it was called " Anatomia Thomae Parri " and credited to William Harvey.

The Parr autopsy was first printed in full in Harvey's *Opera omnia* of 1766. It was not to appear in English until the Willis translation of 1847.

William Harvey included much social and medical history of the patient in his anatomical examination, not in a separate, preliminary discussion in the manner of modern clinico-pathological conferences, but weaving into the autopsy report such facts af Parr's pre-mortem history as were known to him.

Harvey begins by stating that Thomas Parr died at the age of 152 years, nine months. There is nowhere in the autopsy record an expression of disbelief in Parr's age.

The body was that of a muscular man with hairy chest. (Taylor's poem had said: " From head to heel, his body hath all over, a quick-set, thick-set, natural hairy cover "). The arms, recorded Harvey, were covered with black hair, the legs without hair. The organs of generation were healthy, the testes " sound and large ," suggesting to Harvey that the report of his incontinence seemed " not improbable."

The Willis translation runs as follows on the lungs and heart:

> The chest was broad and ample; the lungs, nowise fungous, adhered, especially on the right side, by fibrous bands to the ribs. They were much loaded with blood, as we find them in cases of peripneumony (pleuro-pneumonia), so that until the blood was squeezed out, they looked rather blackish. Shortly before his death I had observed that the face was livid, and he suffered from difficult breathing and orthopnea. This was the reason why the axillae and the chest continued to retain their heat long after his death; this and other signs that present themselves in cases of death from suffocation were observed in the body.
>
> We judged indeed, that he had died suffocated, through inability to breathe, and this view was confirmed by all physicians present and reported to the King. When the blood was expressed, and the lungs were wiped, their substance was beheld of a white and almost milky hue.
>
> The heart was large and thick and fibrous and contained a considerable quantity of adhering fat, both in its circumference and over its septum. The blood in the heart, of a black colour, was dilute, and scarcely coagulated: in the right ventricle alone some small clots were discovered.

The rib cartilages were soft and flexible and Harvey remarked on their not being ossified, " in any greater degree than they are in ordinary men."

Stomach and intestines were grossly normal. The kidneys were " bedded in fat " and there was a " proper cyst " the size of a hen's egg on one kidney. There were no renal nor bladder stones. A great deal of fat was found in the mesentery; the colon was adherent to the liver. The spleen was small, the brain grossly normal.

In summary, Harvey said:

> All the internal parts, in a word, appeared so healthy, that had nothing happened to interfere with the old man's habits of life, he might perhaps have escaped paying the debt due to nature for some little time longer.

It is certain, however, that with the marked evidence of pneumonia and left heart failure, Thomas Parr could not escape his debt in November 1635. What William Harvey contended was that if Parr had remained in quiet Shropshire's pure air and on a simple Shropshire diet, he would have escaped longer.

Harvey's Medical History of Parr

Harvey's " Anatomy of Thomas Parr " included, as has been mentioned, a medical and social history of Parr, which must be teased free of the strictly pathological observations.

It seemed not improbable to Harvey that the common report of Parr's doing penance for incontinence was true. Parr's wife, whom he married at about the age of 120, had stated, Harvey reported, that " not until about twelve years back had he ceased to embrace her frequently." The ample space Harvey alloted to the organs of generation and to Parr's sexual life, reflect the attention that was paid to these matters by Harvey's contemporaries.

Parr, said Harvey, observed no regularity in eating, taking food at any hour, day or night, as he wished. His ordinary diet was sub-rancid cheese, milk in every form, coarse and hard bread, and sour whey. At home, on this simple diet, " free from care, did this poor man attain to such length of days."

The changes in Parr's life that led to his death were chiefly change of air and change of diet, William Harvey reported to the king. The " light, cool and mobile " air of Shropshire was exchanged for the impure, smoke-laden air of the city of London, which, says the report, is worse in the autumn.

Parr's diet had changed from a simple, unvaried sort to a " table loaded with a variety of viands " and strong drink. This deranged the entire body by way of the stomach and liver, Dr. Harvey believed. Harvey's detailed account of the pathogenesis may sound far-fetched as he traces the chain of events through the systems of the human body, yet we cannot quarrel in the 20th century with fundamental physiological principles involved in the care of the aged.

Thomas Parr had been blind for twenty years prior to his death. His

hearing was good and he understood all that was said to him in his last months of life. He apprehended well and answered questions immediately. His memory was greatly impaired for remote events. When Harvey reports that Thomas Parr knew nothing of public events or figures as evidence of loss of memory, it seems he may have forgotten that his "poor countryman," blind for many years, may never have been a well-informed man in his Shropshire isolation. Harvey reports paradoxically that Parr had a good memory for recent events, that is of the few years preceding his death. Until his 130th year, Thomas Parr engaged lustily in every kind of agricultural labor, even threshing wheat. In his last days, Parr could walk about, if slightly supported by a person aiding him on either side.

19th Century Antiquary Scepticism

W. J. Thoms, whose examination of the Parr case in his *Human Longevity*, 1873, is thorough, gave it as his opinion: Old Parr's age was pure fable.

The "authorities" Thoms considered were Arundel, the poet Taylor, the monument in Westminster Abbey, and the testimony of Harvey. No real particle of evidence existed to support the belief that Parr reached the age of 152. The gravestone states, he grants, what those who put it there honestly believed. Thoms, as we mentioned, found that it had been replaced in the 19th century. The register of Westminster Abbey was very incomplete before 1660. It did not include a burial entry of Parr in 1635.

Of the many reputed facts of Taylor's poem, no confirmation was found by Thoms. No certificate could be found in the mid-nineteenth century to establish Parr's birth. Thoms reasons that *some* documentary trace of the man's existence ought to have been found if the legend were true. In the diocesan records in Shropshire, especially in Alberbury where the famous penance in the sheet was endured, no mention of Parr was to be found. Thoms printed, in 1869, in *Notes and Queries*, an open letter inviting information from whatever source, manuscripts, church records or public records. No information was forthcoming.

The brief recorded conversation with King Charles is discounted by Thoms as evidence, since it is only based on Parr himself:

The King: "You have lived longer than other men, what have you done more than other men?"
Parr: "I did penance when I was a hundred years old."

This boasting of sexual health to the king was sufficiently known to

excite comment from William Harvey in his report of the post-mortem examination. Yet, as Thoms points out, Harvey did not see Thomas Parr until 50 or 52 years after the incident in Alberbury church was supposed to have taken place.

Thoms, then, leaves the reader with the fact that an exceptionally old man, probably a centenarian, died in 1635 in London, where he was buried by people who believed him to be 152 years old. William Harvey accepted the current belief, so far as his manuscripts can tell us.

Another antiquary of the 19th century was Sir G. C. Lewis, whose opinions are found in an article by Tollemache, called " Sir G. C. Lewis and Longevity." Lewis stated categorically that no one could live past 100-110. In the particular case of Thomas Parr, there were no birth register or baptismal register documents to establish the date of birth. Tombstone evidence was rejected as unsound. Tollemache and Lewis, like Thoms, considered the evidence in the claims for Parr's advanced years " wholly inconclusive."

The Fall of Old Tom Parr

Praise of Shropshire, of its standing hills remembered in London by another transplanted Shropshireman, is found in A. E. Housman's twentieth century verses, *A Shropshire Lad*. But here the poet told not of the death of the body but of the homesickness and sadness in the city of London of a country man. William Harvey's concluding paragraphs on Thomas Parr are in the mood of some of Housman's verses.

For Harvey felt deeply that the life in the city had interrupted Parr's charmed escape from old age and death. His contrast of London and Shropshire, though stated in the particular terms of scientific analysis, carries as profound a conviction in favor of Shropshire as the poet's.

The fall of Old Parr, said James Joyce in *Finnegans Wake*, " the fall of a once wallstrait oldparr " is told in bed and in minstrelsy. Though the play upon the Wall Street stockmarket fall is plain enough, more is contained. For Joyce would not write a pun with double meaning if three or four meanings were possible. (When told his punning was trivial, he once replied that it was quadrivial.) It is plain, that while he did not exclude the element of Parr's fall being a failure to escape death entirely, Joyce considered Old Parr's fall to be preeminently the sexual transgression.

The fall from grace, the departure from the " strait " path of virtue, put Thomas Parr in the ranks of those real and legendary humans whose

career was marked by a fall. Thus the Parr story was woven into the dream-world of the hero of Joyce's novel. It was given an important place, in the opening paragraphs which sound the keynote, so say Campbell and Robinson (in *A Skeleton Key to Finnegans Wake*), of the entire work.

Joyce extracted from Parr's story its essence and it did not matter whether that were fact or fable in his building of the greater fable of *Finnegans Wake*. What did matter was that it be part of recorded human experience and for that, folk-lore was as good as history.

We lose by critical examination of the story of Thomas Parr, a man who really conquered old age and death. For no evidence supports the story's truth. But we have found a great contribution to the folk-lore of the Anglo-American world, which apparently wanted very much to believe that someone could escape old age, decline and death.

REFERENCES

1. Harvey, William: *The Works of William Harvey M. D.*, translated by Robert Willis, London, Sydenham Society, 1847.
2. Keynes, Geoffrey: *A Bibliography of the Writings of William Harvey*, Cambridge University Press, 1928.
3. Taylor, John: "Life of Thomas Parr," 1635, *see Thoms.*
4. Thoms, W. J.: *Human Longevity*, London, John Murray, 1873, including in the appendix, John Taylor's "Life of Parr" and Harvey's Autopsy.
5. Tollemache, L. A.: Sir G. C. Lewis and Longevity, *Fortnightly Review*, 1869, Vol. V: 454-472.
6. Wilson, Henry: *Wonderful Characters*, including Thomas Parr. New York, Harper & Brothers, 1834.
7. Edgar, James D.: The Old, Old, Very Old Man, *Military Surgeon*, April 1928, Vol. 62: 499-503.
8. Campbell, J. and Robinson, H. M.: *A Skeleton Key to Finnegans Wake*, New York, Harcourt Brace & Co., 1944.

GERMAN CONCEPTS OF ONTOGENY AND HISTORY AROUND 1800 *

OWSEI TEMKIN

1.

If we look at Haller's *Elementa Physiologiae* we find the first part of the last volume devoted to conception, embryology, and birth. The second part then takes up the subject of "Human life and death." [1] It starts with *growth* which gradually slackens until man has reached his *status*. "Then," Haller says, "man is most perfect and happy as far as his condition allows. The nerves feel acutely, the muscles enjoy full strength, and he is conscious of desire as well as apt for fertile love." [2] The *status* is succeeded by the *decrementum* which ends with *death* when "the cadaver rots" and "the immortal soul remains." [3] Waning life "is a sad topic yet abundant in material. Indeed, while the body was still on the increase, while the extending forces still held the upper hand over the resisting forces, the animal body nevertheless hardened on all sides." [4] Now, however, these negative forces are no longer balanced and man's body marches towards its end. The religious opinions met with in the *Elementa* cannot disguise the fact that Haller's analysis is largely mechanistic.[5] He conceives of the process of life as of two systems of forces acting in different directions. This point of view was also compatible with a vitalistic physiology as expressed, for instance, in Bichat's famous formula of life as the totality of the functions resisting death. Whether explained mechanistically or on the basis of vital properties, the process of life remained a sequence of events determined by conflicting forces rather than by a law of its own.

Most physiologists of the 19th century came to deal chiefly with the physiology of some adult but otherwise ageless organism.[6] Embryology

* This is a revised version of a paper read before the History of Science Society, Boston, Mass., December 29, 1949.

[1] Albertus Haller, *Elementa physiologiae*, tomus octavus, Bernae, 1766. The title of the whole volume is: "Fetus hominisque vita." The first part (liber 29) is entitled "Fetus," the second (liber 30) "Vita humana et mors."

[2] *Ibid.*, pars 2, p. 48.

[3] *Ibid.*, p. 348 (table of contents).

[4] *Ibid.*, p. 68.

[5] For a discussion of the religious issues involved see below p. 245.

[6] Joh. Heinr. Ferd. Autenrieth gave his *Handbuch der empirischen menschlichen Physiologie* (2 vols., Tübingen, 1801-2) the subtitle, "Lehre von der Natur des erwachsenen

and, above all, the physiology of man's ages did not receive much attention; their discussion was usually relegated to the beginning or end of the text. Richerand [7] gave an interesting reason for this practice when he said:

> I have placed after generation, an abridged account of life and death, in which will be found whatever did not belong to any of the preceding divisions. The necessity of this appendix, containing the history of the different periods of life, that of the temperaments and varieties of the human species, that of death and putrefaction, arises from the impossibility of introducing into the particular history of the functions, these general phenomena in which they all participate.

Today we have eliminated the discussion of "the phases of man's life" and of death almost entirely from our texts. Death, as Dr. Guttentag [8] states, is hardly even listed in the indices of modern textbooks of physiology. Partly this is due to the elaboration of embryology, pediatrics, endocrinology, and other special disciplines which deal with the problems of aging or with certain age groups. But I think that to some extent this is due to a tendency to consider death a pathological rather than a physiological phenomenon. Primitive unicellular organisms, it is argued, can die, but they need not die. They can survive through division in an endless series of generations. Even in man our tendency goes towards doubting a predetermined boundary of life. Some 150 years ago, Blumenbach,[9] the famous anthropologist and physiologist, wrote: "Thus we are conducted to the ultimate line of physiology—to death without disease, to the senile εὐθανασια which it is the first and last object of medicine to procure. . . ." This positive accent on senility and death seems somewhat surprising today. If we think of medicine in the perspective of a future we seem more likely to hope that senility may become a preventable disease and that death may be pushed further and further into a vague distance. And indeed, if the process of life is nothing but the interplay of physical forces that can be understood and then controlled, it would not be illogical to hope for a progressive advance in the prolongation of this process. If, however, the process of life, because of some inner law, leads necessarily through the

Menschen im gesunden Zustande," excluding embryology, which as he said (vol. I, p. xv) "Usually filled but one chapter of most physiologies."

[7] A. Richerand, *Elements of Physiology*, translated by G. J. M. De Lys (American ed. by N. Chapman and J. D. Godman), Philadelphia, 1823, p. 84.

[8] Otto E. Guttentag, On the clinical entity, *Annals of Internal Medicine*, 1949, vol. 31, p. 489. This paper provides an interesting discussion of the "irreversibly finite course of life."

[9] J. F. Blumenbach, *The Institutes of Physiology*, transl. from the Latin of the third and last edition by John Elliotson, 2nd ed., Philadelphia, 1817, p. 369. The Greek word in the quotation means "euthanasia."

different ages and to death, then such hopes are nothing but wishful thinking. It was such a concept of life in which each stage has its definite place that gained momentum among some German physiologists around 1800. The rise of this movement is closely related to embryology on the one hand and to history on the other.

2.

The rise of German embryology begins in 1759 with the publication of Caspar Friedrich Wolff's *Theoria generationis*. This publication marks the beginning of a successful fight against the prevailing theory of preformation, according to which the female ovum or the male spermatozoon possesses the main characteristics of the individual so that ontogeny is basically an unfolding of what already exists. Like some others before him,[10] Wolff opposed preformation by a theory of epigenesis and the authority of neither Haller nor Bonnet was great enough to obliterate his name in Germany. It is a mistake, though often repeated, that Wolff's *Theoria generationis* was forgotten or failed to make a serious impression and that it took the German translation of Wolff's other work, *On the Formation of the Intestines*, to remind the world of him. It is true that the latter essay remained practically unknown until Meckel's translation in 1812.[11] It is equally true that the emphasis in these two works is placed differently. But I am afraid that Goethe is partly responsible for the misapprehension that in 1790, when he published his *Metamorphosis of Plants*, preformation still prevailed and Wolff was unknown. Goethe learned of the *Theoria generationis* only around 1792,[12] but this was due to his own

[10] See Wilhelm His, Die Theorien der geschlechtlichen Zeugung, *Archiv für Anthropologie*, 1870, vol. 4, pp. 197-220, 317-332; 1872, vol. 5, pp. 69-111. F. J. Cole, *Early Theories of Sexual Generation*, Oxford, 1930. Tadeusz Bilikiewicz, *Die Embryologie im Zeitalter des Barock und des Rokoko*, Leipzig, 1932, p. 103 ff. Joseph Needham, *A History of Embryology*, Cambridge University Press, 1934, p. 190 ff. Arthur William Meyer, *The Rise of Embryology*, Stanford University Press, 1939, p. 54 ff. Bentley Glass, Maupertuis and the beginning of genetics, *Quarterly Review of Biology*, 1947, vol. 22, pp. 196-210.

[11] Caspar Friedrich Wolff, *Über die Bildung des Darmkanals im bebrüteten Hühnchen*. Übersetzt und mit einer einleitenden Abhandlung und Anmerkungen versehen von Johann Friedrich Meckel, Halle, 1812. The Latin original that appeared in the *Novi Comment.* of the St. Petersburg Academy in 1768-69 was not available to me.

[12] In his "Entdeckung eines trefflichen Vorarbeiters," dated 1817, Goethe said: ". . . und ich freue mich bekennen zu dürfen, dass ich seit mehr als fünfundzwanzig Jahren von ihm und an ihm (i.e. Wolff) gelernt habe." This indicates his first acquaintance with Wolff between 1790 and 1792. In the "Annalen oder Tag- und Jahreshefte," an entry under the date of 1807 reads: "besonders suchte man von Caspar Friedrich Wolfs Theoria generationis sich *immer mehr* (italics mine) zu durchdringen." This sounds like a renewed and intensified reading of the *Theoria generationis*.

oversight, not to that of his contemporaries.[13] Moreover, by that time epigenesis, in Germany, had found an even more aggressive and popular protagonist in Blumenbach, whom we mentioned before. At any rate, before the century had passed, epigenesis, though not without qualifications,[14] was accepted by leading German biologists and philosophers,[15] to mention only Herder, Kant, and Schelling among the latter.[16]

Wolff's *Theoria generationis* [17] presents a somewhat puzzling sequence of ideas. Its main part deals with the development of plants which is conceived as a chapter in the physiology of nutrition and growth. Under the influence of an "essential force" and a specific nutrient substance, annual plants develop their various parts step by step and the continuation of the same process leads subsequently to a withering away until the cycle is begun anew in the following year. Throughout this part, the "essential

[13] J. H. F. Kohlbrugge, Historisch-kritische Studien über Goethe als Naturforscher, *Zoologische Annalen*, 1913, Bd. 5, pp. 83-228; see p. 201 and especially p. 218, note 14, where Kohlbrugge names a number of authors, including Herder, who mentioned Wolff before 1790, and rightly says: "Wir haben in bezug auf Wolff scharf auseinander zu halten, dass seine ersten Schriften weite Verbreitung fanden . . . während nur eine . . . unbeachtet blieb. Die ersteren hätte Goethe schon vor 1790 kennen sollen."

[14] For instance, I. H. F. Autenrieth, *Observationum ad historiam embryonis facientium, pars prima*, Tubingae 1797, p. 2, writes: "Nos igitur evolvi organa, ubi germina eorum conspicimus, formari, ubi nullum eorum rudimentum antea apparuit, dicemus." See also footnote 16, below.

[15] Cf. His, *loc. cit.*, vol. 5, p. 106.

[16] Kant, *Kritik der Urteilskraft*, § 81. Kant's arguments for epigenesis which he accepted together with Blumenbach's concept of the nisus formativus are interesting. He rejects the idea of the formation of organisms out of dead matter by mere mechanical laws. Likewise, he rejects preformation as supernaturalistic. Epigenesis has the advantage of being better founded in facts and of granting nature a maximum of creative power. Consequently he considers epigenesis as a system of "generic preformation," because "the productive ability of the procreators regarding the inner appropriate predispositions (zweckmässige Anlagen) with which their stock was endowed, that is the specific form, was virtually preformed." Goethe, in his remarks on "Bildungstrieb," arrived at similar conclusions: ". . . und wenn wir keine Präformation denken mögen, so kommen wir auf eine Prädelineation, Prädetermination, auf ein Prästabiliren, und wie das alles heissen mag, was vorausgehen müsste bis wir etwas gewahr werden könnten." In other words, the theory of epigenesis, as accepted in Germany around 1800, contained a strong teleological element and was, therefore, a compromise between preformation (rejected in the form of emboitement) and mere mechanistic explanation. For Herder and Schelling see below. C. O. Whitman in a series of lectures (*Biological Lectures* delivered at . . . Wood's Hole, 1894, Boston, 1896, pp. 205-272) has shown the complexities of Bonnet's preformistic theories.

[17] The German translation by Paul Samassa, *Caspar Friedrich Wolff's Theoria generationis (1759)*, 2 vols., Leipzig, 1896 (Ostwald's Klassiker der exakten Wissenschaften, nos. 84 and 85) is more easily accessible than the two Latin editions (Halle, 1759 and 1774). The German *Theorie von der Generation*, Berlin, 1764, unfortunately was not available to me.

force" often seems identical with what we should call osmosis so that the impression of a mere mechanical interpretation becomes very strong.[18] It is only in the subsequent parts that the teleological nature of the process is stressed and Wolff's strong antimechanistic bias clearly exhibited. In principle, Wolff considered his theory of plant development as elucidating the ontogeny of animals too.[19] However, the part dealing with animal embryology is not only shorter, but the complication of the subject leads to a greater emphasis on descriptive observation. This latter aspect predominates in the essay *On the Formation of the Intestines*, where the specific approach to be followed in animal embryology is stressed. Plants reveal the general elementary processes of ontogeny. In animals, on the other hand, the actual changes must be followed in the various organic systems and must be described individually since they differ from one another.[20]

Whatever one may think of Wolff's general theories, the fact remains that epigenesis teaches the emergence of something new so that the initial germ and the end product have no similarity, although they are still one and the same thing. If the observer puts aside all theory, then he sees under the microscope—and let us stress the fact that Wolff and many other German embryologists made considerable use of the microscope [21]—changes taking place from day to day which he could not foretell. His observations form a chronicle of events which makes it possible to understand the peculiarities of the grown animal. It is the history of this development which relates how a potentiality became an actuality,[22] and the temptation will be great

[18] This may, in part, account for the attempt to make Wolff a monist in the sense of the 1860's; cf. Alfred Kirchhoff, *Die Idee der Pflanzen-Metamorphose bei Wolff und bei Goethe*, Berlin, 1867, p. 14, and, by the same author: Caspar Friedrich Wolff, *Jenaische Zeitschrift für Medicin und Entwickelung*, 1868, vol. 4, pp. 193-220 (especially p. 216 f.).

[19] Wolff, *Theoria generationis, Expositio* § 32, and *passim*.

[20] Wolff, *Über die Bildung des Darmkanals*, p. 67: "Bei den Thieren erkennt man dagegen (i. e. in contrast to plants) mehrere Entstehungsweisen, mehrere dadurch veranlasste Thätigkeiten, mehrere dadurch erzeugte Producte, welche die Theile des Thiers darstellen; zwischen denen daher keine Beziehung, so wie in dem einen nicht der Grund des anderen erkannt wird." Cf. also *ibid.*, p. 69 f.

[21] For Döllinger, in particular, we have von Walther's (p. 63; see below, footnote 24) testimony that he was interested in the use as well as manufacture of the microscope. George Oberhäuser, who later went to Paris from where he supplied German physicians with microscopes, had served his apprenticeship as a mechanic in Würzburg where Döllinger was professor. See Justus Thiersch, Zur Geschichte des Mikroskopes (George Oberhäuser), *München. med. Wchnschr.*, 1933, vol. 80, p. 1671, and Richard H. Shryock, *The Development of Modern Medicine*, New York, 1947, p. 170, n. 2.

[22] Johannes Müller, *Handbuch der Physiologie des Menschen*, Coblenz, 1837-1840 (vol. 1 in third edition) Bd. 1, 1, p. 24: "Der Keim ist das Ganze, *Potentia*, bei der Entwicke-

to ascribe ontogeny to an entelechy or a formative instinct (the nisus formativus of Blumenbach) or a genetic force which unconsciously[23] realizes an end.

This analysis may prepare us for what really happened in the minds of Döllinger and his pupils, Pander and Carl Ernst von Baer, who most successfully continued Wolff's work and at the same time thought of ontogeny and man's ages in historical terms. But since so little is commonly known about Döllinger, the head of the school, a few biographical remarks may not be amiss.[24]

3.

Born in 1770 in Bamberg, Döllinger, after medical studies at home and abroad, returned to his native city where, in 1794, he was appointed professor of " the institutes of medicine and botany." Bamberg was approaching the zenith of its medical fame. Moreover, when Schelling visited the city, " Naturphilosophie " began to reign supreme. In 1802 Döllinger was transferred to Würzburg as professor of physiology and pathology, later adding anatomy to the subjects he taught. Schelling too had received a call to Würzburg. At first Schelling and Döllinger were on the friendliest terms, but in 1806 an estrangement took place.[25] The years in Würzburg until 1823, when he moved to Munich, were the most fruitful ones of Döllinger's life as a creative scientist. He died in 1841.

We may now begin our discussion of Döllinger's work with a paper of 1814, *On the Value and Significance of Comparative Anatomy*, the main object of which he defines as the quest for the laws of formation whereby new life instinctively realizes a certain type.[26] Teleological reflections about the usefulness of parts, Döllinger thinks, do not belong to comparative anatomy. Some parts have no use at all and the fact that in the

lung des Keimes entstehen die integrirenden Theile des Ganzen *actu*" (italics in the text). See also above, footnote 16.

[23] The role which the concept of the " unconscious " played in German romantic science has been brought out by Alexander Gode-von Aesch, *Natural Science in German Romanticism*, Columbia University Press, 1941.

[24] The following biographical data are chiefly based on J. Friedrich, *Ignaz von Döllinger*, I, München, 1899, and Ph. Fr. v. Walther, *Rede zum Andenken an Ignaz Döllinger*, München, 1841.

[25] Friedrich, *loc. cit.*, pp. 47-50.

[26] Ignaz Doellinger, *Ueber den Werth und die Bedeutung der vergleichenden Anatomie*, Würzburg, 1814, p. 21: " Der erste Trieb, womit sich die Lebendigkeit äussert, ist das Bilden, dieses geht nach einem, in der Lebendigkeit selbst gegründeten Typus vor sich; dieser Typus muss erfüllt, und durch die Gebilde dargestellt werden. . . ."

organism all organs must be compatible is a condition for its existence rather than a principle by which to comprehend it.[27] It is not difficult to recognize Goethe's concept of morphology as well as Goethe's aversion to teleology in this document of 1814. Döllinger was an ardent admirer of Goethe although I can only speculate about the way he had become acquainted with Goethe's views at such an early date.[28] Probably Schelling had a share in it,[29] or the botanist, Nees von Esenbeck, who at that time was residing at Sickershausen near Würzburg.[30] In the following year, 1815, Carl Ernst von Baer came to Würzburg as Döllinger's pupil and in turn persuaded Pander to join them in early 1816. One day when all three were on their way to visit Nees von Esenbeck, Döllinger expressed the wish that a young scientist should investigate anew the development of the chick under his direction. Pander acceded to the task; Döllinger generously turned over to him his own material and the result was Pander's famous thesis on *The History of the Metamorphosis Which the Incubated Egg Undergoes during the First Five Days.*[31] The thesis appeared in 1817 and was followed by the *Entwickelungsgeschichte des Hühnchens im Eye*,[32] d'Alton, another of Goethe's protégés, having also cooperated.[33] The two works continue Wolff's observations and form the basis of the theory of germ layers.

I have given the German title of Pander's second publication because of the word *Entwickelungsgeschichte*, "history of development." Carl Ernst von Baer's even more important book of 1828 also carried the word

[27] *Ibid.*, pp. 20-22 and 24 f.

[28] With the exception of the *Metamorphosis of Plants*, Goethe's morphological writings began to appear in print in 1817 only.

[29] Goethe's relationship with Schelling, who was connected with the University of Jena from 1798 to 1803, as well as with other scientists in Jena has been noted by Kohlbrugge, *op. cit.*, pp. 85, 105 n. 9, 146 ff.

[30] Christian Gottfried Daniel Nees von Esenbeck (1776-1858) had studied medicine in Jena where he was influenced by Schelling and became Goethe's friend. In 1802 he retired to Sickershausen where he remained until 1817 when he became professor of botany in Erlangen. *Allgemeine Deutsche Biographie*, vol. 23, 1886, p. 368 ff., and Erik Nordenskiöld, *The History of Biology*, New York, 1942, p. 289.

[31] Ch. Pander, *Dissertatio inauguralis sistens historiam metamorphoseos, quam ovum incubatum prioribus quinque diebus subit*, Wirceburgi, 1817.

[32] Pander, *Beiträge zur Entwickelungsgeschichte des Hühnchens im Eye*, Würzburg, 1817.

[33] The episode which led to Pander's investigations as well as the relative share of Döllinger, Pander, and d'Alton are discussed by von Baer in his autobiograhy: *Nachrichten über Leben und Schriften des Herrn Geheimraths Dr. Karl Ernst von Baer, mitgetheilt von ihm selbst*, zweite Ausgabe, Braunschweig, 1886, p. 192 ff., and in von Baer's *Entwickelungsgeschichte* (see footnote 34) p. V f.

Entwickelungsgeschichte in its title.[84] What did Döllinger and his school mean by "history" of development?

In his *Entwickelungsgeschichte der Tiere* of 1828 von Baer sums up his results as follows: "The history of the development of the individual is the history of the growing individuality in every respect."[85] The context leaves little doubt that history is here taken in a more than descriptive sense. But if we wish to understand its full meaning we must turn to Döllinger's fragmentary *Elements of Physiology*[86] which began to appear in 1836, five years before his death.

This peculiar work is an attempt to expand a treatise on embryology into a physiology of man's entire life. Having remarked that life is a process from imperceptible beginnings to death, and that there is a constant change of building and destruction going on within the body, Döllinger writes in the introduction: "In this course of life and passing of existence the single phenomenon itself cannot have any significance for itself; for everything that at a certain time appears as part of the process has its peculiarity only by what preceded it and thus prepared it and gave rise to it. And its value consists merely in its contribution to the establishment of a coming stage of development. Thus, the knowledge of individual human existence cannot truly be other than historical. . . ." And the introduction ends in the following general definition: "Physiology should be a history of what happens and how it happens in the course of man's individual process of life, according to his generic character." The process of life, for Döllinger, is no longer a mere result of conflicting forces but a process in which each phenomenon has its "historical place" and a definite significance for what precedes and follows.[87] It would be easy to translate this introduction into Hegelian terms and to say that for Döllinger life is a process in which each phenomenon is but a moment within the totality.

[84] Karl Ernst v. Baer, *Über Entwickelungsgeschichte der Thiere*, erster Theil, Königsberg, 1828.

[85] *Ibid.*, p. 263: "Die Entwickelungsgeschichte des Individuums ist die Geschichte der wachsenden Individualität in jeglicher Beziehung."

[86] I. Döllinger, *Grundzüge der Physiologie*, Regensburg und Landshut, 1836. The book stops abruptly on p. 368 in the middle of a sentence. See also below, footnote 40.

[87] *Ibid.*, p. 4: "Somit kann auch die Erkenntniss des individuellen menschlichen Daseins in ihrer Wahrheit lediglich nur eine *historische* seyn, wobei es zwar ursprünglich auf die richtige Auffassung einer jeden dem Lebensprozess angehörenden Erscheinung ankömmt, deren wissenschaftliche Tendenz aber nur darin gefunden werden mag, dass überall eine *historische* Ansicht hervorleuchte, und deren Forschungen durch das Bemühen für jede einzelne Erscheinung im Gange des Lebens die *historische* Stelle, und ihre Bezie-

In this emphasis on the course of life, Döllinger and his school stood not alone among their romantic contemporaries. Burdach in his six volumes of *Physiology as a Science of Experience*,[88] which he wrote in cooperation with von Baer, Rathke, Valentin, Johannes Müller, and others, attempted something similar. The first three volumes are devoted to "The history of life" and deal respectively with generation, embryology, and the ages of man including death. Here too, the traditional order is reversed. What used to be relegated as an appendix to the end of a text, now emphatically was placed in the foreground. But whereas Burdach, in the remaining volumes, reverted to functional physiology,[89] Döllinger pushed the "historical" approach to the extreme and endeavored to integrate not only embryology and histogenesis, but all functions of the grown organism into one. To achieve this aim he had to take up the embryological account again and again and yet try to preserve the continuity of the process as a whole. Moreover, he had to introduce metaphysical principles in order to include death as a determining point in the development of the individual. This is brought out very clearly in his discussion of the physiology of circulation. The universe, he says, uses adult progenitors as instruments in order to maintain existing species by the production of new individuals. Thus the newly conceived individual, as far as its body is concerned, exists as a part of the earth and, in the beginning, as a part of the maternal organism. Its task now is to separate itself from the mother. In birth it achieves independent life which, from this moment on, it has to maintain against the surrounding cosmic forces. The second task then is to achieve freedom from these forces and to establish its egoistic principle even more validly. This leads to "a second birth; natural death, resulting in the autonomous transfer to a third sphere of life." Consequently, for Döllinger, the real life of a human individual has two main periods: "The first period is the embryonic life before birth, the second (period) begins with birth and continues until natural death. Thereby two main

hung auf das, was vor ihr war und nach ihr seyn wird, damit also auch ihre Bedeutung im Gesammtlebensprozesse, auszumitteln, geleitet werden" (italics mine).

[88] Karl Friedrich Burdach, *Die Physiologie als Erfahrungswissenschaft*, Leipzig, vols. 1-3 (second edition), 1836-38; vol. 4, 1832; vol. 5, 1835; vol. 6, 1840. The individualistic and "historical" element of romantic medicine is also discernible in its case histories; see Owsei Temkin, Studien zum "Sinn"-Begriff in der Medizin, *Kyklos*, 1929, vol. 2, p. 56.

[89] Vols. 4-6 are devoted to: "Die Lehre vom bestehenden Leben" and deal with what we may call "vegetative" physiology. Three more volumes, dealing with "animal" physiology had been intended, as well as a tenth "Band . . . der die Geschichte des Lebens auf Erden überhaupt und des Menschengeschlechts insbesondere zum Gegenstad hätte" (vol. 6, p. 610).

periods are also given in the genesis of the circulatory system (Blutbahnbildung)." [39a] It is strange to find such reasoning in a chapter on the cardiovascular system; no wonder that the work was never completed.[40]

So far we have shown the existence of a concept of "historical" physiology among German biologists and its close association with the rise of epigenetic principles in embryology. Embryology indeed was the science in which Germany stood foremost at a time when it was behind other countries in most branches of positivistic research. The importance of the embryological studies reveals itself not only in the contemporary achievements of Meckel, Oken, Pander, von Baer, and others, but likewise in their bearing upon the future of general anatomy. The romantic anatomists and physiologists, being so greatly interested in embryology, were wont to use the microscope and to inquire into the genesis of tissues as well as of organic form. Thus, in 1824 Döllinger could write:

> A perfect and in every respect satisfactory anatomy to which, as we say, the fundament has already been laid,[41] must give the time and manner of origin of all formations of the human body. It must determine with precision their particular *tissues* and how, afterwards, one differentiates from the other. It must separate the connection of the organs, it must narrate how the parts grow and, while growing, change as to form and *tissue*, how they change their position, how what is separated becomes connected and what is simple gradually dissolves into something manyfold. It must exactly describe the structure at the point of completed growth, the perfect fulfillment of the concept of individual life. It must, in the subsequent periods, show the causes of natural death in the changes of formations and *tissues*. And, finally, it is also its task to establish the laws which result from an attentive consideration of the natural differences of the human race.[42]

On the other hand, in his practical microscopic work, the embryologist encountered "vesicles," [43] "globules," [44] "granules," [45] or similar bodies in the primordial embryo. Whether or not these bodies sometimes were

[39a] Döllinger, *Grundzüge der Physiologie*, p. 279; see also *ibid.*, p. 323 f.

[40] H. Eichhorn, in his obituary of Döllinger, *Medicinisches Correspondens-Blatt bayerischer Aerzte*, 1841, zweiter Jahrgang, pp. 173-76 and 186-89, ascribes (p. 188) the abrupt ending of the book to publications by J. Müller and R. Wagner which made the published part obsolete.

[41] Döllinger here refers to the work of J. Fr. Meckel which has been well reviewed by Rudolf Beneke, *Johann Friedrich Meckel der Jüngere*, Halle, 1934.

[42] Ignaz Döllinger, *Von den Fortschritten, welche die Physiologie seit Haller gemacht hat*, München, 1824, p. 13 (italics are mine).

[43] Wolff, *Theoria generationis*, § 6 ff.

[44] *Ibid.*, § 168. Carl Ernst von Baer, *Entwickelungsgeschichte*, *passim*, devotes much energy to tracing the fate of the "Kügelchen" in the development of the chick.

[45] Pander, Beiträge, § 1, p. 4 and *passim*.

identical with what we call cells,[46] the fact remains that to the embryologist their existence seemed a reality. Anatomists like Cuvier and Bichat might neglect the microscope; anatomists interested in the "history" of the human organism could hardly do without it.[47] Thus the ground was being prepared for the subsequent emergence of the cellular theory.[48] It has one of its roots in the predilection for genetic anatomy and physiology, that is embryology, which Johannes Müller had praised as the science in which "nature herself reveals the plan of her thoughtful operations."[49]

Now it is well known that the idea of "development" exerted a common influence upon all branches of romantic thought. Contemporaneously with "historical" physiology, historical work in the strict sense flourished in Germany where Niebuhr in 1811, with the publication of the first volume of his Roman history, initiated a new historiography. Was there an inner relationship between these two movements? I shall try to show that it was the idea of ontogenetic development in particular that linked the philosophy of nature and of history.[50] For this purpose we must once more return to the 18th century and the struggle between the followers of preformation and epigenesis.

[46] J. Walter Wilson, Dutrochet and the cell theory, *Isis*, 1947, nos. 107 and 108, pp. 14-21, has pointed out the fallacies in identifying the "globules" and "cellules" of older anatomists with cells in the modern sense. In emphasizing the work of German romantic biologists, I do not wish to overlook the contributions of French scientists like Dutrochet, Milne Edwards, Raspail, and others. For the whole history of the cellular theory see Marc Klein, *Histoire des origines de la théorie cellulaire*, Paris, 1936 (Actualités scientifiques et industrielles, 328).—John R. Baker, The cell-theory: a restatement, history, and critique, *Quarterly Journal of Microscopical Science*, 1948, vol. 89, pp. 103-125, and 1949, vol. 90, pp. 87-108, subsumes the early attempts under the heading "The globule-theory" (I am indebted to Dr. Erwin H. Ackerknecht for this reference).

[47] This should not be interpreted as if the historical school had been the only one interested in embryology or microscopy. On the other hand, it may help to answer the question, raised by Richard H. Shryock (*The Development of Modern Medicine*, New York, 1947, p. 170), as to why the microscope was exploited by German rather than French physicians and biologists. The younger Meckel, though an outstanding embryologist, made little use of the microscope; but it is perhaps significant that he was strongly influenced by Cuvier and stood in opposition to speculative Naturphilosophie (See Beneke, *op. cit.*, pp. 21, 29 ff., 98, 110).

[48] The title of Schleiden's contribution, "Beiträge zur Phytogenesis," is in itself suggestive. E. Küster, in *Hundert Jahre Zellforschung* by L. Aschoff, E. Küster, W. J. Schmidt, Berlin, 1938 (Protoplasma-Monographien, Bd. 17), pp. 6-7, has stressed Schleiden's ontogenetic approach.

[49] J. Müller, Jahresbericht über die Fortschritte der anatomisch-physiologischen Wissenschaften im Jahre 1833, *Archiv für Anatomie, Physiologie und wissenschaftliche Medicin*, 1834, p. 2.

[50] Morris Cohen, *The Meaning of Human History*, La Salle, The Open Court Publishing Company, 1947, p. 13, has pointed out the influence of embryology upon "the notion of continuous development through a definite series of stages."

4.

Among the early adherents of epigenesis in Germany we find Herder, the erstwhile pupil of Kant and mentor of the youthful Goethe. In the *Ideen zur Philosophie der Geschichte*, which began to appear in 1784, Herder is quite outspoken in his rejection of preformation and uses the term "genesis" to express the true nature of embryonic development.[51] Genesis to Herder is the equivalent of the German word "Bildung," a term so dear to Goethe.[52] Speaking, further on, of the "genetic force," [53] he not only quotes Wolff's *Theoria generationis* but shows himself well acquainted with its contents.[54] However, here his agreement with Wolff ends. The invisible force which is at work manifests itself in the formation of the embryo, but it must have the type of this manifestation in itself. "The new creature is nothing but a materialized idea of creative nature which never thinks otherwise than by acting." [55] This platonic element of the organism as representing an idea is fundamental for romantic biologists—we still find it dogmatically confirmed in Johannes Müller's *Physiology* as late as 1840.[56] Ontogeny, then,

[51] Johann Gottfried Herder, *Ideen zur Philosophie der Geschichte der Menschheit*, book 5, II: "Präformierte Keime, die seit der Schöpfung bereit lagen, hat kein Auge gesehen; was wir vom ersten Augenblick des Werdens eines Geschöpfs bemerken, sind wirkende organische Kräfte."

[52] *Ibid.* In this section, Herder opposes "Bildung" (genesis) to both preformation and epigenesis. "Sieht man diese Wandlungen . . . so, dünkt mich, spricht man uneigentlich, wenn man von Keimen, die nur entwickelt würden, oder von einer Epigenesis redet, nach der die Glieder von aussen zuwüchsen. Bildung (genesis) ist's, eine Wirkung innerer Kräfte, denen die Natur eine Masse vorbereitet hatte, die sie sich zubilden, in der sie sich sichtbar machen sollten." At that time, Herder was not yet acquainted with Wolff's *Theoria generationis* which, according to Rouché, he read only while working on the second part of the *Ideen*; see Max Rouché, *La philosophie de l'histoire de Herder*, Paris, 1940, p. 198. This was partly in line with the qualifications with which German philosophers and biologists accepted epigenesis (see above, footnotes 14 and 16).

The accent placed on "Bildung" raises the question as to Goethe's influence who, on his own testimony, conversed daily with Herder when the latter worked on the first part of his *Ideen*. While Goethe's influence cannot be excluded, the fact that Goethe, at this time, was not conversant with Wolff's work speaks for the independent progress of Herder's studies.

[53] Herder, *Ideen*, book 7, IV: "Die genetische Kraft ist die Mutter aller Bildungen auf der Erde, der das Klima feindlich oder freundlich nur zuwirkt."

[54] *Ibid.* "Aus Kügelchen, zwischen welche Säfte schiessen, wird ein lebender Punkt . . . das Herz erzeuge sich nicht anders als durch eine Zusammenströmung der Kanäle, die schon vor ihm waren." These thoughts seem to be derived from Wolff, rather than Harvey whom Herder also cites.

[55] *Ibid.*; see also Rouché, *op. cit.*, p. 200.

[56] J. Müller, *Handbuch*, Bd. 2, Abtheilung 3, p. 505. The relationship of German

is the materialization of this idea, and though it may involve mechanisms, it will not be the mere result of an interplay of forces. Now if this is true, the ages of man and his death must also be planned by nature. Herder immediately proceeds to confirm this necessary consequence. The genetic force does not leave the creature it formed, but goes on to sustain it until it weakens in old age. But here we seem to be confronted with a difficulty. For just how long does the genetic force remain active within us and why does it weaken? These questions also must have their answer if the ages of man are to be explained as immanent necessities of life. Herder hints at the answer and Schelling states it quite clearly. Nature is not interested in the individual but only in the species to which it belongs. Though the individual represents an idea, this idea is that of its species. Nature therefore will sustain individuals until they are grown up and able to reproduce. When men and women love each other, they feel desires and have illusions. "Sweetly deceived creatures," Herder exclaims, "enjoy your time! Yet know that it is not your little dreams but the greatest view of nature which you, pleasantly compelled, are thereby advancing." [57] And Schelling adds that after the time for reproduction has passed nature turns against the individual and destroys it.[58]

So much is necessary to explain how physiologists who accepted such ideas could think of human life as a "historical" process. There remains the question as to whether they were justified in using the term "historical." The answer to this question depends largely on what is meant by "history." Schelling, the father of "Naturphilosophie," had stated that nature herself might be considered historically, not so, however, natural objects.[59] We may agree with him and concede that the "history" of development (Entwicklungsgeschichte) is no real history. Let us there-

biologists and physicians, including Döllinger, von Baer, Burdach, and Johannes Müller to romantic philosophy has been brought out by Werner, *Schellings Verhältnis zur Medizin und Biologie*, Diss. Leipzig, Paderborn, 1909. For Johannes Müller see, in particular, Martin Müller, *Über die philosophischen Anschauungen des Naturforschers Johannes Müller*. Leipzig, 1927.

[57] Herder, *Ideen*, book 2, II; see also Arthur O. Lovejoy, Some eighteenth century evolutionists, *Popular Science Monthly*, 1904, vol. 65, p. 331.

[58] Erster Entwurf eines Systems der Naturphilosophie, in *Schellings Werke*, herausgegeben von Manfred Schröter, 2. Hauptband, München, 1927, p. 51: "Von diesem Augenblick an, da das Gemeinschaftliche gesichert ist, wird die Natur das Individuelle verlassen, wird aufhören in ihm thätig zu seyn, oder vielmehr, . . . sie wird anfangen darauf entgegengesetzte Wirkungen auszuüben; von nun an wird das Individuelle eine Schranke ihrer Thätigkeit seyn, welche sie zu zerstören arbeitet." This writing dates of 1799.

[59] System des transzendentalen Idealismus (1800), *loc. cit.*, p. 588. The general difference between the "historical" and the "scientific" method and its bearing upon morphology have been well formulated by Thienemann, *loc. cit.* (see footnote 60), p. 273 f.

fore consider the role ontogeny played in the development of truly historical thought. We shall then perhaps find a synthesis on a higher level.

With so many of his contemporaries, Herder believed in a "scala naturae," a chain of beings from the lowest to the highest, man.[60] This chain was linked not only by perfection of forms, but also by an ascent of functions. In plants, nutrition and reproduction are the only organic forces. They still predominate in the lowest animals, which also possess something analogous to sense and voluntary movement. With higher forms irritability and then sensibility step to the foreground, while the power of reproduction is weakened.[61] Herder believed that the chain of being had come into existence successively. Species had perished in the revolutions of the earth and higher forms had been built from the lower material.[62] Herder did not believe in descent.[63] The creation of higher forms was the work of the genetic force which also manifested itself in the development of the individual. The genetic force was, therefore, the common link between ontogeny and creation of new species.

This being the case, it was not far fetched to assume, on the basis of an identical genetic force, the existence of a parallelism between ontogenetic development and the scale of beings. Kielmeyer, the friend of Cuvier, in his famous speech of 1793,[64] drew this consequence by suggesting the so-called law of recapitulation couched in physiological language.[65] Sensibility, irritability, and the force of reproduction appear in the embryo in a sequence similar to their relative distribution in the scale of nature. A morphological formula was added by Autenrieth in 1797.[66]

[60] August Thienemann, Die Stufenfolge der Dinge, der Versuch eines natürlichen Systems der Naturkörper aus dem achtzehnten Jahrhundert, *Zoologische Annalen*, 1909, vol. 3, pp. 185-274. Arthur O. Lovejoy, *The Great Chain of Being*. Harvard University Press, 1936.

[61] Herder, *Ideen*, book 3, II.

[62] *Ibid.*, book 10, II and V.

[63] This has been elaborately proved by Max Rouché, *Herder précurseur de Darwin?* Paris, 1940.

[64] Carl Friedrich Kielmeyer, Ueber die Verhältnisse der organischen Kräfte untereinander in der Reihe der verschiedenen Organisationen, die Geseze und Folgen dieser Verhältnisse. Reprinted, with notes by Heinrich Balss, in *Sudhoffs Archiv*, 1930, vol. 23, pp. 247-267.

[65] Em. Rádl, *Geschichte der biologischen Theorien*, 1. Theil, Leipzig, 1905, p. 262. J. H. F. Kohlbrugge, Das biogenetische Grundgesetz. Eine historische Studie, *Zoologischer Anzeiger*, 1911, vol. 38, pp. 447-453. E. S. Russell, *Form and Function*, London, 1915, p. 89 f.

[66] Autenrieth, *Observationum* etc., p. 24 f.: "Plura ad comparandos diversos embryonis se evolventis status cum constantibus inferiorum animalium formis in interna structura partim evidentissima, et quaedam, quae in adulto Afro minus, quam adulto Europaeo ex

Herder's influence on Kielmeyer is so obvious that it has escaped the notice of neither modern historians nor Herder's own contemporaries.[67] Schelling, in 1799, even quoted the pages of Herder's *Ideen* to which Kielmeyer was indebted.[68] And at the same time Schelling incorporated Herder's and Kielmeyer's ideas into his own system.[69] The chain of being is nature's endless attempt at achieving an ideal product.[70] In this she constantly fails, because each species develops sexual differentiation, and any differentiation of functions is incompatible with the ideal. Thus nature tries again and a higher species results. On the other hand, the embryo of each species up to the point where it develops sexual characteristics, runs through all stages of organization. Hence Schelling arrives at a formula

reliquiis embryonis mutata videntur, progressus opusculi exhibebit. Verum semper ad id attendendum erit, in serie organisationum sensim sensimque partes plane novas communi omnium trunco se addere, aliis interdum in totum evanescentibus, . . . et homini suas proprias in formatione idiosyncrasias esse et dari series extra animalia quasi cohaerentes, nequaquam in uno eodemque individuo unquam obvias. . . ." Neither Kielmeyer nor Autenrieth was the discoverer of the law of recapitulation. To mention the 18th century only: Haller (according to Autenrieth, *ibid.*, p. 20), Bonnet (see Lovejoy, *The Great Chain of Being*, p. 285), and John Hunter (see Needham, *loc. cit.*, p. 203), had already anticipated it in varying degrees of clearness. I here use the term "law of recapitulation" merely in the sense "that animals in the course of their embryonic development pass through stages corresponding to the mature forms lower in the scale" (S. J. Holmes, K. E. von Baer's perplexities over evolution, *Isis*, 1947, nos. 107 and 108, p. 9). There is some reason to believe that Kielmeyer really thought of descent; see Heinrich Balss, Kielmeyer als Biologe, *Sudhoffs Archiv*, 1930, vol. 23, p. 276 ff.

[67] Johann Eduard Erdmann, *A History of Philosophy*, English translation edited by W. S. Hough, vol. 2, London, 1890, p. 572. Balss, Kielmeyer als Biologe, *loc. cit.*, p. 287 (Carl Siegel's *Geschichte der deutschen Naturphilosophie*, Leipzig, 1913, to which Balss here refers, was unfortunately not accessible to me). According to E. Jacobshagen (cited by Beneke, *Johann Friedrich Meckel der Jüngere*, pp. 112 and 152), Herder's *Ideen* were the starting point for the whole biological movement around 1800 including not only Kielmeyer but also Goethe, Cuvier, and Pfaff.

[68] Schelling, Erster Entwurf eines Systems der Naturphilosophie, *loc. cit.*, p. 195, footnote. It must, however, not be overlooked that certain similar ideas of Vicq d'Azyr, which Thienemann, *loc. cit.*, p. 252 ff., has outlined, may also have influenced Kielmeyer.

[69] Kuno Fischer, *Geschichte der neuern Philosophie*, sechster Band: Friedrich Wilhelm Joseph Schelling, Heidelberg, 1872-1877. Balss, Kielmeyer als Biologe, *loc. cit.* Oskar Walzel, *German Romanticism*, translated by A. L. Lussky, New York-London, 1932, pp. 18-20. Hegel, Vorlesungen über die Geschichte der Philosophie, in *Georg Wilhelm Friedrich Hegel, Sämtliche Werke*, Jubiläumsausgabe in zwanzig Bänden, herausgegeben von Hermann Glockner, Stuttgart, vol. 19, p. 648, writes: "Erst später (i. e. after 1798), in Bezug auf Herder'sche und Kielmeyer'sche Schriften,—wo von Sensibilität, Irritabilität und Reproduktion, ihren Gesetzen, z. B. dass je grösser die Sensibilität, desto geringer die Irritabilität u. s. f. gesprochen wird . . . fasste er (i. e. Schelling) dann . . . die Natur in Gedanken-Kategorien auf, und machte allgemeine bestimmtere Versuche wissenschaftlicher Ausführung."

[70] For this and the following see Schelling, Erster Entwurf, *loc. cit.*, p. 43 ff.

for the law of recapitulation which is surprisingly modern since it implies that the series of species is determined by an ontogenetic series.[71] But to Schelling too, the species themselves are immutable.[72] If viewed singly, they are but the manifest failures of nature to create the absolute product. But if all species were viewed as embryological stages in the development of one ideal organism, then this ideal organism could be considered as converging towards the final product.[73] In other words, the chain of being would be but one process of ontogeny. Moreover, if we knew how organic functions had combined in course of time to form the different species with their different organs, we should have a real history of nature instead of mere natural history.[74]

It is easy to perceive in this system the basis for Oken's claim that man was the complete animal, all other species being but persistent forms of his ontogeny.[75] And Döllinger must still have been under the influence of similar thoughts when, in 1824, he wrote that all products of nature could be considered as experiments which had to precede man, the acme of creation.[76] This was an echo from Herder and Robinet.[77]

Herder was certainly not original in all his biological thought. Buffon for one deeply influenced him as Rouché has abundantly shown.[78] Goethe's possible influence must not be forgotten either, though I have felt all the more justified to omit Goethe from the present discussion since his ideas on evolution form the subject of a recent paper by Riese.[79] If I have chosen

[71] *Ibid.*, p. 53: ". . . die Verschiedenheit der Organisationen reducirt sich zuletzt allein auf die Verschiedenheit der Stufen auf welchen sie in entgegengesetzte Geschlechter sich trennen." Rádl, *op. cit.*, p. 259, is partly right in saying that Schelling stressed "den Stufengang jener (i. e. physiological) Prinzipien, nicht den der Formen." However, Schelling, *loc. cit.*, p. 74, showed himself aware of the need for correlating these principles with definite organs.

[72] *Ibid.*, p. 32 ff.

[73] *Ibid.*, p. 64.

[74] *Ibid.*, p. 68.

[75] Lorenz Oken, *Elements of Physiophilosophy*, from the German by Alfred Tulk, London, 1847, p. 492: "Animals are only the persistent foetal stages or conditions of man." See also Russell, *op. cit.*, p. 90 f.

[76] Döllinger, *Von den Fortschritten* etc., p. 3: "So wie der Mensch an der Spitze der irdischen Schöpfung steht, und alle Naturproducte als Versuche gelten können, welche vorangehen mussten, ehe sich in einem Vollendeten das Bild der Gottheit würdig abspielen konnte. . . ."

[77] See Lovejoy, *The Great Chain of Being*, p. 279 f.

[78] Rouché, *La philosophie de l'histoire chez Herder*, p. 207. Arthur O. Lovejoy, Buffon and the problem of species, *The Popular Science Monthly*, 1911, vol. 79, pp. 464-473 and 554-567, see p. 566.

[79] Walther Riese, Goethe's conception of evolution and its survival in medical thought, *Bull. Hist. Med.*, 1949, vol. 23, pp. 546-553.

Herder as my main witness for the connection of biological and historical thought, it is because this connection in his own mind certainly existed (as Rouché [80] has pointed out), because his direct and indirect influence on Schelling as well as on many biologists [81] is well attested, and, above all, because he was the chief protagonist of an organic concept of history with its emphasis on the individuality of each culture.

5.

In 1774, when epigenesis had not yet gained recognition,[82] there appeared Herder's essay, *Auch eine Philosophie der Geschichte zur Bildung der Menschheit*.[83] This essay gives a new turn to the old analogy between historical epochs and the ages of man.[84] Herder thinks of mankind as a person that, in course of historical time, has passed through infancy, childhood and manhood. But each civilization of the past, just as each age of man, has its own individuality.

> Youth is not happier than innocent contended childhood: nor is quiet old age more unhappy than fervently striving manhood. . . . Nobody is in his age only; he builds upon the preceding one which becomes nothing but the basis of the future, does not want to be anything else—thus speaks the analogy in nature, the telling model of God in all works! manifestly so in the human race! The Egyptian could

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[80] Rouché, *loc. cit.*, pp. 226 and 231; see also Carl Siegel, *Herder als Philosoph*, Stuttgart und Berlin, 1907, p. 156 ff.

[81] Herder is quoted by Joh. Christ. Reil, *Von der Lebenskraft* (Klassiker der Medizin, herausgegeben von Karl Sudhoff, Leipzig, 1910, pp. 12 and 32). J. F. Meckel, *Handbuch der menschlichen Anatomie*, 1. Band, 1815, p. 71 (see also Beneke, *op. cit.*, pp. 66 and 112). F. Joseph Gall and G. Spurzheim, *Anatomie et physiologie du systême nerveux en général, et du cerveau en particulier*, 4 vols., Paris 1810-1819, *passim*. For Carl Ernst von Baer see further below. See also Walzel, *loc. cit.*, Ernst Hirschfeld, Romantische Medizin, *Kyklos*, 1930, vol 3, pp. 1-89, *passim*, and Walter Pagel, *Virchow und die Grundlagen der Medizin des XIX. Jahrhunderts*, Jena, 1931, p. 8 ff. (Jenaer medizin-historische Beiträge, 14).

[82] In the same year the second Latin edition of Wolff's *Theoria generationis*, edited by one of his friends, was published.

[83] Herder, Auch eine Philosophie der Geschichte zur Bildung der Menschheit, in *Herders sämmtliche Werke*, herausgegeben von Bernhard Suphan, fünfter Band, Berlin, 1891, pp. 475-594.

[84] Friedrich Meinecke, *Die Entstehung des Historismus*, 2 vols., München und Berlin, 1936; see vol. 1, pp. 60 and 260; vol. 2, pp. 314 and 423. John Arnold Kleinsorge, *Beiträge zur Geschichte der Lehre vom Parallelismus der Individual- und der Gesamtentwicklung*, Diss. Jena, 1900, has traced the history of the analogy from early Christian times with special regard for its pedagogic significance. In particular he has shown how this analogy implied a law of recapitulation that was made explicit in the late 18th century. Thus he quotes (p. 30) Gedike as writing in 1779: "Die Entwicklung einzelner Menschen geht eben den Gang, wie die des ganzen Menschengeschlechts."

not be without the Oriental, the Greek built upon both of them, the Roman arose upon the back of the whole world—truly progress, progressive development even if no single unit gained by it. [85]

It is not difficult to perceive the similarity between this concept of history and Döllinger's concept of "historical" physiology as outlined above.[86]

In the *Ideen*, which began to appear ten years later, the comparison between epochs of history and ages of man no longer stands in the foreground. Instead, Herder elaborates his genetic concept of ontogeny and emphasizes the parellel between biological species and national civilizations. All animal organization is fundamentally of one type, but this type shows innumerable adaptations to the different circumstances of life.[87] All mankind is fundamentally one, but there are many historical adaptations to different time, climate, political, and other circumstances. And just as in embryology and the successive creation of species, it is an inner force that accounts for historical development too. "Living human forces are the spring of human history, and since man takes his origin from and in one race, his formation, education, and way of thinking hereby become genetic." [88] In the last analysis then, there is a threefold parallelism between (1) ontogeny and the ages of man, (2) successive creation of species, and (3) the history of mankind through successive civilizations.

We can thus perceive a peculiar relationship between the concepts of history and ontogeny in German romanticism. As Herder's works indicate, the "genetic modes of thought" [89] are elaborated in regard to human history, and, with Wolff and Blumenbach, conquer embryology. In turn, embryology loans its concrete image of the ontogeny of an individual to the other realms.[90] Schelling, as we have seen, views the succession of animal species as if it were the ontogeny of one ideal organism. Herder traces the history of the one mankind. Still later, Hegel will construct all human history as the development of the all comprehensive "spirit." And this whole pattern of romantic thought is kept together by an idealistic philosophy with a strongly religious note.

[85] Herder, Auch eine Philosophie, *loc. cit.*, p. 512 f.

[86] See above p. 234.

[87] Herder, *Ideen*, book 10. V. See Rouché, *La philosophie de l'histoire chez* Herder, pp. 213-228; Lovejoy, *The Great Chain of Being*, p. 279 f.

[88] Herder, *Ideen*, book 12, VI, 1.

[89] Arthur O. Lovejoy, Buffon and the problem of species, *loc. cit.*, p. 567: "... the strong impulse towards genetic modes of thought which was already active in the mid-eighteenth century."

[90] See Morris Cohen, *loc. cit.*,

In writing his *Ideen*, Herder believed to trace God's thoughts and to find in nature and history the answer as to man's destiny. Schelling's philosophy of nature had a pantheistic bias; in her highest product, man, nature became conscious of herself, so that nature and mind were united in the knowledge of the absolute. For the pious Albrecht von Haller the span of mortal life was determined by God, but aging and death were conceivable as mechanical processes.[91] The romantic biologists, on the other hand, read a metaphysical meaning into biology. For Döllinger the whole of human life, from conception to death, was a struggle for individual freedom achieved by the rebirth of death. Likewise, his pupil, Carl Ernst von Baer, a great admirer of Herder,[92] believed that the development of organisms was "a maturing towards death."[93] He solved the riddle of death by making the species appear "the abiding thoughts of creation" and the individuals "passing manifestations of these thoughts."[94] And these "thoughts" themselves form a successive series at the end of which stands man in whom matter has come under the rule of an ever progressing mind.[95]

Sentiments like these were echoed by Thomas Huxley when, in 1852, he wrote:

> The individual animal is one beat of the pendulum of life, birth and death are the two points of rest, and the vital force is like the velocity of the pendulum, a constantly varying quantity between these two zero points. The different forms which an animal may assume correspond with the successive places of the pendulum.
>
> In man himself, the individual, zoologically speaking, is not a state of man at any particular moment as infant, child, youth, or man; but the sum of all these, with the implied fact of their definite succession."[96]

When this was written, Huxley did not yet believe in the theory of descent. His revered master was Carl Ernst von Baer of whose creed we are

[91] For the dualism of Haller's religious and biological views see Stephen d'Irsay, *Albrecht von Haller*, Leipzig, 1930, pp. 17-33.

[92] Karl Ernst v. Baer, *Reden gehalten in wissenschaftlichen Versammlungen und kleinere Aufsätze vermischten Inhalts*, erster Theil, St. Petersburg, 1864, pp. V and 61 f.

[93] *Ibid.*, p. 39.

[94] *Ibid.*, p. 41 f. "Die Organisationsformen, diese durch Zeugung zusammenhängenden Reihen, scheinen bleibende Gedanken der Schöpfung; die Individuen sind vorübergehende Darstellungen dieser Gedanken." However, as defunct species prove, the "thoughts" too can pass so that "the passing thoughts" become but expressions of a "fundamental thought (Grundgedanke)," p. 61.

[95] *Ibid.*, pp. 57 and 72.

[96] *The Scientific Memoirs of Thomas Henry Huxley*, ed. M. Foster and Ray Lankester, vol. 1, London, 1898, p. 147 f.

reminded by Huxley's later phrase, "the mind of which the universe is but a thought and an expression." [97]

Life, thus conceived, is of course a mere idea, comparable to the "spirit" of Hegel's philosophy of history. The analogy seems indeed striking enough. To the biologist, individual life represents the species. To Hegel, the individual finds its proper place in his national culture and his state. The biologist admits the destruction of species and the emergence of new ones. To Hegel, world history is represented by a succession of national civilizations.[98] Finally, life or a genetic force is made the somewhat mysterious substratum behind nature's history, just as "the world spirit" calls forth the various nationalities whenever they are needed for its progress. This analogy may also help to explain how a generation that accepted such a view of world history, could be relatively little concerned about the question as to how new species had come into existence if not by descent. If evolution, in nature as well as in history, depended on its own inner creativeness,[99] then the mystery of man's origin was not solved by making him emerge from an ape.[100]

We started out with a discussion of the physiology of man's course of life. We found that in Germany, around 1800, a concept was formulated in which the ages of man were reviewed as a "historical" sequence from conception to death. In the formation of this concept, embryology on the one hand and true history on the other played a decisive role, both influencing each other on the basis of a common idealistic philosophy with religious undercurrents.

[97] *Ibid.*, p. 307. See also Owsei Temkin, Metaphors of human biology, *Science and Civilization*, ed. by Robert C. Stauffer, Madison, 1949, p. 174 f.

[98] Hegel, Vorlesungen über die Philosophie der Geschichte, *loc. cit.*, vol. 11, p. 112 f., where the "spirit" is said to reappear in new forms for which the old ones present the material. This is reminiscent of Herder's creation of new species from the material of those destroyed.

[99] I use this expression as a reminder of the connection of thought between romanticism and Bergson. See Arthur O. Lovejoy, Bergson and romantic evolutionism, *University of California Chronicle*, 1914, vol. 15, no. 4.

[100] Carl Ernst v. Baer, *Reden*, p. 56; see also S. J. Holmes, *op. cit.* Arthur O. Lovejoy, The argument for organic evolution before "The Origin of Species," *The Popular Science Monthly*, 1909, vol. 75, pp. 499-514 and 537-549, as well as in other publications, cited above, has shown how frequently the problem of evolution had been discussed before Darwin. As long as natural processes were conceivable as external manifestations of thought, the theory of descent need not have had the same irresistable appeal it has to us for whom an uninterrupted chain of material causes and effects is a main metaphysical postulate. The turn towards a mechanistic biology which, in Germany, took place in the late 'thirties thus appears as a prerequisite for the ready acceptance of Darwinism.

MILITARY MEDICINE ON THE LOUISIANA FRONTIER:

A Letter of Melines Conklin Leavenworth to Dr. Eli Todd

LEONARD K. EATON

A characteristic of American historical development in the early nineteenth century is the eastward flow of scientific information. As the frontier moved toward the Pacific, scores of amazed travellers recorded their impressions of the new country in letters to eastern friends. Some of these unwitting scientific pioneers were doctors, men who naturally took an interest in the strange and unusual fauna and flora and in the peculiar diseases which they encountered. Frequently they had correspondents in eastern centers of learning who classified their discoveries and published them in the scientific journals then just beginning to flourish in the United States. By this process our scientists soon built up a knowledge of the plants and animals native to the North American continent.

Typical of these pioneer naturalists was Melines Conklin Leavenworth, a Connecticut physician who saw much of the south and west in the course of eleven years service with the army. The son of a Waterbury manufacturer, he was born in New Haven on January 15, 1796; we have little knowledge of his boyhood other than the bare records of his attendance at academies in Cheshire and Ellsworth. Presumably he was attracted to medicine at an early age, for he studied with Drs. Baldwin of Great Barrington and Jonathan Knight and Eli Ives of New Haven before attending Yale Medical School. After graduating in 1817 he had charge of the botanical garden under Ives, and in 1819 journeyed through the south as an assistant to a Dr. Whitlaw, an itinerant lecturer on botany. Of his movements during the following decade we know only that he studied French for a time in Augusta, Georgia, practiced at Cahawba, Alabama, fell sick with fever there, and then returned to Augusta for four years.[1] In 1831, after a journey described in the following letter to Dr. Eli Todd, superintendent of the Hartford Retreat, he entered the army medical corps. Serving honorably through the Seminole War, he resigned his commission in 1842 and settled down in his native Waterbury. Like many another wanderer who knew the great west, the former army surgeon was often

[1] P. H. Rockwell, "Biographical Sketch of Melines C. Leavenworth, M. D.," *Proceedings of the Connecticut Medical Society*, 2nd series, II (1864-1867), 269-272.

unhappy with his quiet existence in New England; his heart longed for the active life of the southwestern plains.

Leavenworth's outstanding contributions to science were his botanical discoveries. Having obtained a leave of absence, he did not journey home to his friends, but pressed forward into unknown regions taking careful note of all unusual plant forms. Among his correspondents were John Torrey and Asa Gray who repeatedly acknowledged his work in their vast compendium of American flora. The results of his explorations also appeared in Benjamin Silliman's *Journal of Science*: in the letter printed below he reports that he has sent specimens and descriptions of certain previously unclassified species to Dr. Tully (undoubtedly Dr. William Tully of New Haven, Professor of Materia Medica at Yale) for publication in that periodical.[2] In addition Leavenworth devotes a good deal of attention to the tarantula and centipede, arthropods which he had not encountered in his other travels. Like most of his contemporaries and many moderns, he erred in considering the former pest " extremely venomous."

Notwithstanding the presence of these bothersome creatures, his chief medical problems were " miasmatic fevers " and ophthalmias. As here used, " fever " is an omnibus word; it could mean almost anything. In all probabilty, most of these cases were malaria. The disease has always been endemic in the lower Mississippi valley, and the troops under the young surgeon's care must have been constantly exposed. By prescribing quinine after a course of purgatives, he was following the orthodox therapy for the disease in those days: his reference to the system of Broussais indicates an acquaintance with European medicine not ordinarily found in frontier practitioners. At the same time he discarded the Frenchman's therapeutics, commenting that, " the authors of such theories must have but a limited knowledge of disease." This reaction is undoubtedly the sentiment of a man who relied on his own hard-won knowledge rather than the statement of one familiar with the new scientific medicine then developing in Paris. As R. H. Shryock has pointed out, French medicine never really took root in the United States at this period;[3] it is unlikely that Leavenworth was acquainted with the really significant discoveries of the great French clinicians.

[2] For Leavenworth's other contributions see his articles, " New Species from Alabama," *The American Journal of Science and Arts*, Series I, Vol. VII (1824), 61-62, and " Description of a New Plant, Tullia Pycnanthemoides," in the same periodical, Series I, Vol. XX (1831), 343-347.

[3] Richard H. Shryock, *American Medical Research, Past and Present* (New York, 1947) 30-35.

Even more serious than the " miasmatic fevers " of the command were its ophthalmias. Leavenworth's descriptions of these troublesome disorders indicate that he was faced with something more than mere epidemic conjunctivitis. The prevalence of the disease among troops from the Choctaw country is particularly significant; American Indians have always been plagued with disorders of the eye, and venereal diseases have likewise been common among them. The more stubborn ophthalmias may well, then, have been gonorrheal in origin. The existence of such ailments on the frontier has recently been well dramatized by A. B. Guthrie in his excellent novel, *The Big Sky*. In this work the hero disowns his Indian wife for bearing him a blind child; he himself has had chronic gonorrhea for many years. The appearance of " stationary ophthalmias and partial opacities " confirms this diagnosis. Max Meyerhof, in a perceptive article on the ophthalmias which raged during Napoleon's Egyptian campaigns, has mentioned the great contagiousness of post-gonorrheal trachoma among troops not practicing good personal hygiene, particularly in hot climates.[4] Leavenworth was here dealing with a medical problem which had been familiar to the surgeons of European armies for years; unfortunately his remedies were those of his time and place. The ointment of white vitriol is the only one still sanctioned.

The doctor's observation on the condition of the medical profession in the west is noteworthy. Seeing the great river cities of Louisville, Cincinnati, and St. Louis during a period of rapid growth, he remarked that competition was keen, and physicians were, " for the most part of a poverty stricken generation." The evidence seems to indicate that this was by no means an unusual condition. Twenty years later John Wesley Bond, a publicist for the territory of Minnesota, commented, " There is a sufficient number of legal gentlemen on hand to answer all the ends of justice for the next ten years. We would not recommend a further increase by immigration. . . . The same remark made in regard to the number of lawyers will also apply to physicians." [5] The new West sometimes found more work for farmers and mechanics than for professional men.

The following letter is published through the courtesy of Dr. C. C. Burlingame, Psychiatrist in Chief at the Institute of Living, formerly the Hartford Retreat.

[4] Max Meyerhof, " A Short History of Ophthalmia during the Egyptian Campaigns of 1798-1807," *British Journal of Ophthalmology*, XIX (1932), 148.

[5] John Wesley Bond, *Minnesota and Its Resources* (New York, 1853), 134.

Cantonement Jessup, Louisiana
Oct. 29, 1831

Freind Todd,

There are times of calm retirement when with ourselves and nature at peace we delight to recall the images of past pleasures. Such with me are the present moments. What can, what ought to be more rational than that the recollections of a freind whose united age, intelligence and experience have added to the highest crest of social intercourse, and whose hospitality has imposed upon me a weight of obligation which I feel that I shall never repay, should present themselves? I doubt not it will be to you a matter of surprise to learn that I am so distant from Connecticut; as you doubtless suppose that I am still at the north. Indeed if three months since I had been told that I should have wandered to such a distance, I should have been incredulous. So goes the world. We judge but badly of the present, and know nothing of the future. In August last I left Connecticut on a visit to the western country upon business of my fathers: a journey every way interesting and which I had long been desirous of taking. When I inform you that my route was through Western N. York by the great mail route to Bufaloe on Lake Erie; from thence by steamboat to Ashtabula in Ohio, thru Ohio to Ohio River at Willsville. By SteamBoat to the mouth of the Ohio, up the Mississippi 200 miles; that I have visited the beautiful and flourishing towns of Wheeling, Cincinati, Louisville and St. Louis, either of which are towns as large as Hartford and one of them, Cincinnati, four times as large, you will not fail to conceive that I have been interested. By the by, the competition in our profession is exceeding great in all the western Citties. The doctors are for the most part a poverty stricken generation. The vilages of Western N. York fully eaqual whatever you may have heard of their beauty or prosperity. New York is now and ever must be the first State in our union, both on account of the general fertility of its soil and its commercial advantages. Bufaloe is a verry thriving place containing seven or eight thousand inhabitants, is the natural place of deposit for the immense and fertile regions bodering on the great Lakes and must ere long be a large Citty and the second town in the state. Of the Ohio and Mississippi towns, Louisville Ky. is in the ratio of its population (ten thousand) by far the most commercial. St. Louis must be a large town and must ultimately take the precedency of all the western Citties, commanding as it does the trade of Missouri and a great portion of that of the exceedingly fertile state of Illinois. The immense trade of the Mississippi and its tributaries will be readily imagined when we are informed that it constantly employes a number of hundred Steam Boats varying in tonnage from 1 to 6 or 7 hundred tons and that there are a great number more at this moment on the stocks. Illinois probably possesses more land of the first quality than any state in the Union. Like Mississippi it contains a great deal of prairie but is both better wooded and better watered.

The stories that you have heard concerning the danger to human life from the burning of a prairie are no fiction. Conceive yourself in the center of a natural meadow of almost boundless extent; the tall grass is from 5 to 8 feet in height; the fire is near you; the crackling flames are elevated 30 feet; the wind with the speed of a race horse impels the burning torrent upon you, you cannot flee; you cannot penetrate the ocean of flame that with resistless energy urges forward its waves; destruction is before, behind, and around you; without resource to hold at bar the devouring element you must perish. Woe to the hapless individual who under such circumstances cannot find means to fire the grass around him. It is his only chance for life.

Some years since the Black Bear a brave young chief of the Ottawas was with a party of his nation out upon the Prairies. The tall rank grass was on fire. The flames approached him with the rapidity that no human speed could escape. Unfortunately they had no means of kindling a fire around them; with desperate energy they burst the flaming barrier that impeded their flight. They had but just found a place of safety when they were informed that some of the women were likely to perish. The heroic young man with five of his followers with a selfless devotion scarce ever equalled either in savage or civilized life again precipitated themselves into the midst of the devouring elements. They were seen no more; their ashes were found mingled with those for whom they had staked their existence.

In Sept. I visited my relative Brig. Gen'l Leavenworth at Jefferson Barracks 9 miles from St. Louis. I found that the Gen'l was soon to accompany his command to this post (Cantonement Jessup) and that he was desirous that I should accompany him in the capacity of Surgeon. We left Jefferson Barracks on board the Steam Boat Enterprise the 27th Sept. and arrived here the 18th of the present month, a distance by water from St. Louis of near 1300 miles. Since I have remained here in the same capacity and shall remain a few weeks longer until the return of Ass't. Surgeon Craig who has accompanied Col. Many's Comn'd from this to Cantonement Gipson on the Arkansaw. I had the option of accompanying that command but preferred remaining here, having seen enough new countries for the present.

This post is very pleasantly situated (Lat 36° 30′ near Texas) 25 miles south of Natchitoches on Red River on a piny ridge separating the waters of the Sabine and Red River. The streamlets on one side of the cantonement running into the Sabine on the other into the Red River. . . . The animal kingdom is the same as in other southern states. The vegetable kingdom with the exception of some undescribed general species (descriptions of 2 of which I have forwarded to Dr. Tully for publication in the Journal of Science) the same. Of the insect tribe the tarantula and centipede are found here, insects which I have not met with in other Southern States. The tarantula is an exceedingly large species of spider, and altho it seldom does any injury is extremely venomous. I am told upon good authority of an instance of a

man that was bitten by one of these insects and in consequence speedily died. Since we came here the curiosity of the officers and soldiers has led to the discovery of an unusual number of them. The vulgar opinion has suggested itself that they are charmed with the musick of the band. I believe the insect to be the same that goes under the name in the West Indies. The centipede is venomous tho in a far less degree than the tarantula. A lady now in the Garrison while resident in Jamaica was bitten by one; the bite caused much inflammation and pain tho no serious consequences ensued. The scorpion is also found in this Country. My morning reports have for a number of days amounted to 40 individuals per diem. The prevalent diseases are miasmatic fevers and opthalmias. Of these about one third (15) are opthalmias. The command at present consists of 5 companies, the Regimental band, Camp women and the families of the officers. Two of the companies joined us at Vicksburg in the state of Mississippi and have been serving in the Chocktaw Country in the immediate vicinity of the Yazoo River. The fevers of this portion of the command are accompanied with congestion of the liver and a torpid state of the alimentary canal and require more than the usual quantity of calomel and other cathartic medicines. I often give calomel in 2 gr doses in conjunction with antimonials, say every 2 or 3 hours, and then give an active cathartic with decided benefits. In cases like these I have no faith to believe that the Broussaian practice of leeching and lemonade would be of much avail. The authors of such theories must have but a limited knowledge of disease. The fevers among men from the barracks generally require only a few evacuations of the stomach and bowels in order to prepare the system for the quinine. In many cases when at the Barracks Dr. Lyman Foot the attending surgeon prescribed as a tonic a favorite remedy of Dr. Eli Ives, 3 gr. Sulph. Zinc to 1 of Opium made into a pill with results equalling those derived from the Quinine. It is seldom that there are as many cases of opthalmia as among this command in proportion to numbers. (A full compliment of men to a company on the peace establishment is 52 men; there are seldom over 40). In many instances they are extremely obstinate and in the hands of others have proved destructive of vision in spite of the most active treatment. This disease is also most prevalent among the troops from the Chocktaw Country, and is modified by the miastic influence to which the men have been subjected and requiring a modified treatment. Among these troops altho the conjunctiva is reddened and inflamed the eyelids are much affected and the Meibomian glands discharge a copious secretion of pus. Recent cases of this variety of opthalmia appear to require emeticks and cathartics together with the usual means of abating inflammation. Among the troops from the barracks there is comparatively little inflammation of the Tarsi. After prescribing bleeding, if deemed necessary, I apply blisters to the neighboring parts, and if the case proves obstinate, I keep up a constant discharge by means of renewed blisters, setons or Isues. In the first

stage of the opthalmias of each portion of the command I apply to the eye the alum curd, Poultices, Lead Wash, Lotions of the pith of sassafras as I find to best agree with the case. When the inflammation is diminished, I find the warm infusion of Opia a most excellent application, and when the eye will bear it the white vitriol makes a valuable lotion. I have seen cases in which the disease has assumed a chronic form and either remained stationary or a partial opacity appears to be commencing in which pencilling the eye with a weak solution of Nitrate of Silver and immediately applying the lotions suitable to the case has had a most happy effect. In the opthalmias occurring among the troops from the Yazoo Dr. E. E. Blain the accompanying surgeon was much in the habit of using the Red precipitate ointment. I have found pencilling the margin of the eyelids much more effectual. I have found in a number of cases what you have doubtless often observed, that altho the eye is apparently much reddened and inflamed the patients bear the ordinary light of day much better than a darkened room. I trust that all inaccuracies in this hasty sketch will meet with indulgence from one so capable of criticizing as yourself. I hope that I may ere many months again have the pleasure of seeing you. I must confess that there is much to attach me to my native state and happy should I be to spend my days in it provided there could be a certainty of earning a respectable income in it. My extensive and increased acquaintance with gentlemen of science has given and would continue to give me the sincerest satisfaction. Of the gentlemen of the medical profession, truth justifies me in speaking in the highest terms. I have never seen a body of physicians equalling in intelligence those of Connecticut, nor more distinguished for hospitality, unaffected manners, and gentlemanly deportment. Indeed, I feel what I have ever felt, that the world presents few spots where the intelligent man possessed of a moderate income will find more of the rational enjoyments of life, or form stronger attachments than in the good old state of Connecticut. I am a citizen of the world. I believe I speak without favour or effection. Yet a love of entire independence may lead me elsewhere. I have thro my relative Gen'l Leavenworth made an application for an appointment in the army. The duties are light, you have absolute controul of your patients, you are elevated above the censure or applause of old women that are like them, and the income about equivalent to a net income of 12 hundred dollars in private practice.

In conclusion I must desire you to present my best respects and please to accept the tender of my best wishes for your mutual health and happiness.

Sincerely Yrs

MELINES C. LEAVENWORTH.

Portrait of Samuel Sorbière by N. Bonnart, 1664, appearing in *English Essays from a French Pen. A Journey to England in the Year 1663.* By J. J. Jusserand, London: T. F. Unwin, 1895. The quotation under the portrait may be rendered: "There is discerned in his countenance probity, candor, and trust. In the remains of his writings, behold the ability of his mind."

TEXTS AND DOCUMENTS

SAMUEL SORBIÈRE AND HIS *ADVICE TO A YOUNG PHYSICIAN*

FRANK LESTER PLEADWELL

I.

SAMUEL SORBIÈRE (1615-1670); PHYSICIAN, PRIEST, AND PHILOSOPHER

In December, 1922, in an assortment of autographs acquired by purchase in New York, I found a Latin letter by Samuel Sorbière, or de Sorbière, as he sometimes called himself (see fig. 1). A translation of this letter into English follows:

Samuel Sorbière, to the Most Illustrious and Most Learned Doctor Justus Rickward, Doctor of Medicine. Felicitations!

Most Distinguished and Most Kind Rickward,

On my way back from Rotterdam on Sunday, whilst I thought over the great courtesy with which you received me, so insignificant a man, one to whom you owed nothing, and who had long been a mere victim of fate, suddenly, I grew somewhat ashamed of my silence, in that I seemed not sufficiently to have responded to signs of so great a benevolence, and feared lest you might think poorly of me, and hold me altogether unworthy of so many offices of kindness. Yet I have never been guilty of being an ungrateful soul; and as often as kindnesses have been done me, I have never failed openly to attest both what they were, and to whom I owed them; nor have I failed also to try to repay in the same or better measure, if possible. But I know what happened, and why my words came more reluctantly than usual. There is no reason for me to wonder why I had no answer ready to words of unaccustomed goodness. For some years now I have been living among men ignorant of kindness, so empty that they give sound of hollowness. There are no trusty friends about me, no men of true worth, such that their words are not only on the lips, but come from the inmost marrow of the soul. What wonder then, that I was dumfounded, stricken at the unaccustomed brightness of such goodness. Such is my usual way of behaving, Most Illustrious Rickward, and I know that this has happened before; once especially when I experienced the ineffable kindness of the illustrious Grotius, that godlike man. So that I would not have you doubt that your kindness went deep into my heart; and that I would have you be to me in the future what you have been in the past.

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[1] An abridged version of this paper was read at the twenty-second annual meeting of The American Association of the History of Medicine, at Lexington, Kentucky, May 23, 1949.

My private affairs take me to France, my uncle Samuel Petit [2] having died last December, and literary people demand that I should no longer put off the appointed journey; for many learned men eagerly await the translation and erudite commentaries on Flavius Josephus which he spent nine years preparing, until, before his time, yet broken by immense labors, he gave his deserving soul to God. There are many whose mouths are watering for his writings, among others the Jesuits. If these [writings] got into their hands what outrage would come to the fame of the venerable dead, what peril to our family, and what harm to truth! This, God forbid! But you, kind Rickward, be always greatly solicitous that I may achieve my purpose speedily, both by advising your other friends of it in word and letter; and then, since you have much influence with the great and good Dr. Swartecron,[4] by urging him to the same end. I hope that you will do this willingly, since by no other act can you more clearly prove how anxious you are to help me, and how fond you are of your obedient servant. Farewell, and greet Dr. Swartecron in my name.

Written at The Hague, the ninth of May, 1644.

If you have occasion to write to me, address the envelope to M. Renaud [4] on Pooten Street, near M. the Count William.[5]

To Monsieur Rickwaerd, Doctor of Medicine, Princes' Street, right across from the small church, at Rotterdam.

It is pertinent to inquire, who was this Sorbière who wrote so feelingly to his friend Rickward some three hundred years ago?

Samuel Sorbière was born September 17, 1615, in the town of St. Ambroise, in the diocese of Uzes, France. He was the child of Estienne Sorbière and Louise Petit, a sister of Samuel Petit, a clergyman of Nimes, of some notoriety also in the republic of letters. His father, his uncle, and all his family were Protestants, as was Sorbière himself for a good many years. His parents died when he was quite young, and he was adopted by his uncle Petit, also his godfather, who took him into his home and assumed charge of his education. In 1639 Sorbière went to Paris for theological studies, but finding these alien to his tastes, shortly turned to the study of medicine, in which he made rapid progress. He appears to have left Paris for Leyden in 1642, either to complete his medical studies, or to enter upon the practice of his profession. In *Sor-*

[2] Samuel Petit (1594-1643) was a native of Nimes, and by profession a Protestant clergyman and professor of Greek at the College of Arts in that city. The manuscript of his Commentaries on Flavius Josephus is stated by François Graverol to have been purchased by the Earl of Clarendon during his exile at Montpellier, and is now in the Bodleian Library. [MS. 4141-2]

[3] The Dr. Swartecron of Sorbière's letter has not been identified.

[4] David Renaud, a fellow countryman of Sorbière's, and his father-in law to be. Lange Pooten is an important street at The Hague.

[5] Count William was probably the grandson of William the Silent, and eventually to become the father of William III of England.

Viro clarissimo doctissimoque
D. Justo Rickwardo Doctori medico
Samuel Sorberius ὁ πρόπλους.

Praestantissime & amicissime Rickwarde.

cum Roterodamo die Dominica redirem, & mecum reputarem quantâ excepisses comitate. me tantulum hominem, de te nihil meritum, aduersa diu aegre obluctantem fortuna, subiit sane suppudere silentii cuius scilicet non satis mihi uiderer ab tam prolixa benevolentiae significationem respondisse, & uererer ne sequiorem de me suspicionem haberes, indignumque prorsus existimares cui tot humanitatis summa officia obtulisses. Non is tamen sum qui ingrati animi morbo unquam laborarim: nec enim quotiès beneficia in me collata fuere cessavi palam profitari quid & cui deberem, atque adeo eniti ut αὐτῷ τῷ μέτρῳ καὶ λαῴνι, si quâ possem, rependerem. Sed video quid factum sit, atque unde mox mihi praeter morem faucibus haeserit. Verbis

FIG. 1.

Facsimile reproduction of page one of Sorbière's letter to Justus Rickward, M. D., May 9, 1644. (From the author's collection)

beriana, a posthumous work of Sorbière's, published in 1694, comprising a mixture of bon mots, bits of history, and remarks on divers subjects, preceded by a biographical sketch by François Graverol, in a passage referring to Claude Saumaise, Sorbière is quoted as saying, " I have had the good fortune of conversing during two years quite familiarly with the late M. de Saumaise, of whom I was a neighbor in Leyden, where I practiced medicine." In the same work there is also mention of his having resided for a short time in Amsterdam, in a furnished room in the home of one La Barre, near the Bourse. Sorbière returned to France in 1645, but in the following year he was back in Holland and married Judith Renaud, daughter of the Renaud referred to in the letter to Dr. Rickward. Renaud was a former fellow-townsman from St. Ambroise. He now resumed practice in Leyden. How much practice he did is difficult to ascertain, but he was an inveterate writer in many fields including medicine. Sorbière seems to have been something of a rolling stone, and by 1649 or 1650 he was again in France, at Orange, where he was appointed principal of the College. In 1653 his wife died. One child, a son, Henri de Sorbière, was born to the couple. Soon after his wife's death he was received into the Roman faith. " I have heard," Guy Patin wrote in 1653, " that our old friend M. Sorbière, master of the college at Orange, has proved a turncoat, and has become a Roman Catholic. . . . Of such kind are the miracles which can be witnessed today—miracles, I say, of the political and economical, rather than the metaphysic order. He is a widower and a clever fellow, but, sharp as he is, I wonder whether with that new shirt of his, he will succeed in making his fortune at Rome, for the place swarms with hungry and thirsty people."

Shortly after his conversion, early in 1654, Sorbière went to Paris, and following the prevailing custom, published a discourse on the event, which he dedicated to Cardinal Mazarin. He became an abbé and wore the appropriate dress with the " petit collet " of an abbé. The frontispiece of this paper shows him in this dress. After Sorbière had been granted a pension of 400 livres, Mazarin promised him an additional 300 livres, but did not live up to his promise. From Louis XIV he received the rather empty title of Historiographer Royal. Subsequent holders of this office were to be Boileau, Racine, and Voltaire. Sorbière's economic state not improving, he decided to go to Rome, where he made himself known to Pope Alexander VII, by writing him a Latin letter critical of the Protestants. When he met the Pope the latter said to him, " Is it not true that you are the nephew of Samuel Petit? ", an indication that his relation to that scholar gave him more standing than his own erudition. He

gained little or nothing financially from his Roman visit, and soon returned to Paris. It was now that he published an attack against Jean Riolan, Junior, the anatomist, who had questioned Jean Pecquet's discovery of the thoracic duct and the *receptaculum chyli*, just as Riolan had attacked Harvey's demonstration of the circulation.

Pope Alexander VII died on May 22, 1667, and Sorbière made his second visit to Rome in time to see Cardinal Rospigliosi elected Pope with the title of Clement IX. He had been a correspondent of the new Pope, and no doubt went to Rome to ingratiate himself further; but ill-success crowned his efforts, and he complained, not disagreeably, "that he had more need for a cartload of bread, than a basin of confitures." While in Rome he addressed a letter to Hubert de Montmor, in which he drew up a portrait of the new Pope, with a panegyric in his honor. It was at the home of M. de Montmor in Paris that a group of physicians was in the habit of meeting to discuss, not medical subjects alone, but also those in the realm of chemistry, physics, and natural phenomena. This group was the nucleus that later formed the Academy of Physicians, eventually, in 1666, to become the Academy of Sciences. Hubert de Montmor was president of the society, and for a period Sorbière was secretary. About this time Sorbière reported to the society an instance of the transfusion of the blood of an animal into the vessels of a man. This may well have been the transfusion performed by Jean Baptiste Denys, physician to Louis XIV, on June 15, 1667.

Let us now return to Sorbière's letter to Rickward. Rickward is a surname of English origin, sometimes spelled "Ryckward," or "Rickword," and by Sorbière himself "Rickwaerd." In his various works he mentions Rickward only once. In his famous *Voyage to England* which appeared in the Spring of 1664, he voices his regret over not being able to see several friends in Holland, since he goes direct from England to France, and one of these friends is Rickward, who by this time must have been in practice in Holland for twenty years. Rickward's name does not occur in the compilation of *English-Speaking Students of Medicine at the University of Leyden* (R. W. Innes Smith, 1932), nor in Munk's *Roll*, nor in the *Register of Medical Licenses* granted by ecclesiastical authority, 1511-1830.

It is quite apparent from Sorbière's letter that he is far from happy in Holland, and could claim but few friends of the caliber of Dr. Rickward. The repression of feeling, and inability to express a proper degree of gratitude toward his friend which marred his recent visit, for which he is profusely apologetic, must have arisen from a state of affairs existing in

Holland at this time. The country had long been the scene of strife between the different religious sects. From about the year 1603 the peace of the church and the tranquillity of the state had been rent by bitter controversy over religious questions. The followers of Arminius battled with the followers of Calvin. Hugo Grotius, the great jurisconsult, mentioned by Sorbière, was a supporter of the Arminians. Prince Maurice, the ruling authority, was opposed to Grotius and his associates and, in 1618, they were brought to trial. Grotius was condemned to life imprisonment, confined to the Castle of Louvestein, but in 1621, through the skilful connivance of his wife, he was smuggled out of the castle in a chest, and escaped to live in France for the balance of his career, except for one short visit to Holland in 1631. It is probable that Sorbière made his acquaintance either in Paris, or in Senlis.

Sorbière's concern for the safety of his uncle's work on Josephus, and his fears that the Jesuits obtain premature knowledge of it, or even possession of it, and thus imperil its truthful publication, is set forth feelingly in the letter, but how far this alarm was justified, it is now impossible to say. Both the church and the state exercised a rigid control of publications, as Sorbière himself was soon to learn when Louis XIV suppressed his *Voyage to England*. It was in the year 1663 that Sorbière undertook a journey which was to make him famous throughout Europe, both in the literary and the diplomatic world. About the 10th of June, 1663, he arrived in London and remained in England for three months. We know but little of the details of his doings on this visit. Except for a short stay in Oxford, he spent his time in London or its environs. He wrote in high praise of the English landscape. In London he lodged in the Common Garden, because it was near Salisbury House where his friend Thomas Hobbes lived with his patron, the Earl of Devonshire. Hobbes was in exile from 1640 to 1651, and lived in Paris where Sorbière made his acquaintance. The latter was entrusted with Hobbes' *De Cive*, and saw it through the Elzevir Press at Amsterdam. Sorbière made a translation into French of the work. During the London visit Sorbière was presented to King Charles II, was elected a Fellow of the Royal Society, together with Christian Huygens, visited Hatfield House, where he greatly admired the Park, and at Oxford was shown about by Thomas Lockey, librarian of the Bodleian. He returned to France in early October, and wrote an account of his journey. A few weeks later, by decree of the Council of State, Louis XIV ordered the suppression of the book and condemned the author to banishment in Nantes. The cause of this summary exile was variously explained, but the majority attributed it to a

complaint about the book received from the English government. There were political reasons why the French at the time were anxious not to give England any cause for complaint; hence the thoroughness with which Sorbière was punished. However, by October 6, 1664, Cominges, French ambassador to England, wrote to Louis XIV that Charles II considered the author of the work sufficiently disciplined, and recommended him to the royal clemency. Politically the issue died very soon, but for many years the work was still referred to in England as an insolent satire. Much of this perpetuation of feeling was no doubt traceable to the reply to Sorbière which the Rev. Thomas Sprat saw fit to publish in 1665. Of this book Ambassador Jusserand says: "It is a wild, rambling pamphlet, written *ab irato*, the lapse of time having in no way cooled the anger of the author. Sprat is blinded by his passion; his answers in several cases defeat his own intentions, so much that more actual praise of the English nation will be found in Sorbière's book than in Sprat's wild reply." The French edition of Sorbière's *Voyage*, owing to its destruction and suppression, has become a rare book; but copies travelled to Holland and to England, and the work was widely read. Pepys in his *Diary* mentions getting Batty, his man, to read it to him.

Sorbière's interest in philosophy, as well as his contributions in this field, are worthy of notice. He had many friends among contemporary philosophers. Thomas Hobbes, Hugo Grotius, and Christian Huygens have already been noticed. In addition he knew, or corresponded with, Pierre Gassendi, René Descartes, Marin Mersenne, Jean Chapelain, Valentin Conrart, Claude Saumaise, Gilles Ménage, and Guy Patin; strictly speaking not all philosophers, but all scholars of note in Sorbière's lifetime. In the first collected edition of the works of Gassendi, the biography of the philosopher there appearing is from the pen of Sorbière. In 1642, when Descartes was living at Endgeest, near Leyden, he was visited by Sorbière and the account of that meeting has been drawn upon by numerous writers on Descartes. It appeared under "Descartes" in the 14th edition of the *Encyclopaedia Britannica*.

Respecting Sorbière's attitude to Descartes and his system of philosophy, Professor Balz remarks, "As a follower of Gassendi, as physician, man of letters and man of the world, he stood in a complicated situation. Whether from lack of courage or lack of ability, he could neither repudiate Descartes nor follow him. He illustrates the inability of the age either to assimilate the spirit of Cartesian teaching or to escape its influence . . . Sorbière possessed a genuine passion for what we may call physical science. In this he was evidently sincere, whatever may be true for the

rest. Science, a universal science of nature, is the very ideal of intellectual effort. The future lies with the physics of Gassendi, however, rather than with that of Descartes; this is evidently his firm conviction. But he is a compromising and none too courageous spirit."

Graverol mentions that of the ancient physicians, Sorbière esteemed chiefly Galen, of whose methods he was a great admirer, although he found him not without faults. The same authority also says that there was never a man who better knew his Rabelais, whose memory he revered. Among his other favorites were Pierre Charron and Montaigne, whom he preferred to Jean Louis Balzac. In *Sorberiana* there are many references to those whom he calls the " great men of medicine "; but many of the names now seem unfamiliar. He says, " I have given Fernel the praise that is due him " . . . " I value highly the narratives and observations of Forestus, Zacutus, Amatus, and Platerus. I esteem the works of Vesalius, Spigelius, and Veslingius."

There are several references to William Harvey in his works. While Sorbière appears most willing to yield to Harvey a considerable measure of praise for his accomplishments, in the final analysis he fails to express himself frankly, either in opposition to or in support of Harvey's contentions on the circulation of the blood. This attitude was no doubt in part due to his sense of loyalty to Gassendi, Patin, and the other French opponents of Harvey's views.

Samuel Sorbière died on April 9, 1670, after an illness lasting three months. The terminal disease was a double pleurisy. He left a number of works in manuscript to his son, one of which, *Sorberiana*, achieved publication in 1694. Another was his ***Avis à un jeune Médecin***, which was printed in 1672.

On August 8, 1938, while in the library of the British Museum, it occurred to me to look over the items in the catalogue under Sorbière, and note any new ones or any not before familiar to me. It was then that I found a copy of his *Avis*, 1672. The library press mark was 1038. e. 27. Its description and collation was as follows:

Small 16mo book, bound (rebound) in full leather, with covers loose and tied on with a string. The water-mark in the paper (endleaf) was the familiar bunch of grapes of that period. Collation: Title (2-¾″ x 5-⅝″); verso stamp " Museum Britannicum," otherwise blank; " Au Lecteur," pp. ii-v; 7-138; " In Orbitum Samuelis Sorberii Odi," pp.[4]; Approbation, Permission, Consentement, pp. [11].

The French title reads as follows: (see fig. 2):

AVIS / A VN IEVNE / MEDECIN, / SVR / LA MANIERE DONT / il se doit comporter en la pra / tique de la Medecine; vû la / negligence que le Public a / pour elle, & les plaintes que / l'on fait des Medecins. / Par feu Mr DE SORBIÈRE. / [Printer's device] / A Lyon, / Chez Antoine Offray, à la descente du / Pont de Saône, du côté du Change. / [Rule] M. DC. LXXII. / Auec Approbation & Permission. /

A complete verbatim transcript of the text of this small book was made by the writer in the course of two days, and from the French version thus obtained a translation into English has been made. This translation follows.

This work will be recognized as one of those left in manuscript by Sorbière when he died in 1670, and published two years later by his son, Henri de Sorbière. There were many obscurities of the French and Latin texts, which cannot justly be assigned to a scholar of the standing of Sorbière himself. One is led inevitably to the conclusion that the son, as editor, was responsible for them, although the printer's carelessness, and a much worn and broken font of type, may have contributed. This is evidently one of the works referred to by François Graverol as "of no great importance."

However, its interest to the medical historian, and its rarity, are perhaps reasons enough for presenting the translation. It provides a picture of the medical practice of an average physician of three hundred years ago, with observations and comments by a man of superior intellect and intelligence. As to its rarity, not one of the fifteen medical-historical libraries of this country, Great Britain, and Canada, possesses a copy of the book. For ten years the writer has had a standing order for the *Avis* in the hands of several booksellers in Europe, and no copy has been reported.

The identity of the "young physician" has been a matter of speculation, but has not been solved. Could it have been the Justus Rickward of Sorbière's letter of May 9, 1644?

Much of the advice given to his friend the "young physician" could apply with equal cogency to present-day practice, but some of it seems a mere pretext for bringing certain aspects of the medicine of the period into derision, perhaps deservedly. Sorbière is well in advance of the thought of his time in his condemnation of excessive bleeding, over purgation, over dosage, and polypharmacy. Now and then there are portions of his narrative which are sharply cynical or satirical. In physiology and pathology his concepts are often purely Galenical and obsolete, but in other instances he might well be reasoning on the basis of

knowledge available a century later than his own. However, in comparing his acumen about medicine in all its aspects with that of Jean Fernel, who lived a century earlier, one must admit that Sorbière is outranked by Fernel, for whose ideas he once expressed great scorn. Sir Charles Sherrington, in his remarkable book on Fernel's philosophy, remarks that Fernel's orientation to nature and religion was far more reasonable than that of many who came later, and among these we must include Sorbière, although he did assert that Reason and Faith are not opposed. As Professor Balz remarks, "because of Gassendist teachings, because of a faltering spirit, or because of inability to comprehend, Sorbière ignored the Cartesian position as to the necessary linkage of theology, metaphysics, and knowledge of nature."

II.

ADVICE TO A YOUNG PHYSICIAN RESPECTING THE WAY IN WHICH HE IS TO CONDUCT HIMSELF IN THE PRACTICE OF MEDICINE, IN VIEW OF THE INDIFFERENCE OF THE PUBLIC TO THE SUBJECT, AND CONSIDERING THE COMPLAINTS THAT ARE MADE ABOUT PHYSICIANS.

By the Late M. de Sorbière

TO THE READER.

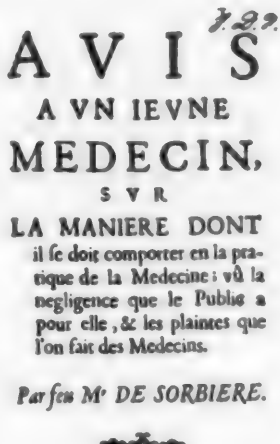
The sciences, which are at basis quite genuine and simple, become very often grounds for a thousand errors and a thousand abuses, arising from the slender knowledge which the public has of them, or from wrong usage. Medicine, whose origin is wholly worthy, is not exempt from these two shortcomings; it is neither known nor practiced according to the precepts of its founders. It is this state of affairs which has stimulated a learned man of this century to make known to one whom he admires, who is beginning the practice of medicine, the present-day failings of practice; and also to make him aware how far in these times this science functions through craft.

This small and liberal bit of writing has emerged from the cabinet of the late Monsieur de Sorbière. Everyone knows how his various works thus far published have won him the regard of all great men, both in this kingdom and in foreign lands; and as an indication of this it will suffice for us to state that the capital of the world has been witness of the favors, the esteem, and the liberality with which he was honored by Clement IX.

I. THE MOTIVE FOR THIS DISCOURSE.

Sir, since you have done me the honor to profess confidence in me, as you know that I am your admirer, and because you assume that my years have

given me more experience than you as yet possess, I feel under an obligation to tell you two or three things which appear necessary in order to correct the bad impression I may have given you of your profession. Now and then you have heard me discuss the subject of medicine a little to its detriment. My desire to procure some advancement for it forces me often to just indignation towards those physicians who do not have at heart sufficiently the interests of that science.



J. 22.

AVIS

A VN IEVNE

MEDECIN,

SVR

LA MANIERE DONT

il ſe doit comporter en la pratique de la Medecine : vû la negligence que le Public a pour elle, & les plaintes que l'on fait des Medecins.

Par feu M^r DE SORBIERE.

A LYON,

Chez ANTOINE OFFRAY, à la deſcente du Pont de Saône, du côté du Change.

M. DC. LXXII.

Avec Approbation & Permiſſion.

FIG. 2.

Facsimile reproduction (somewhat reduced) of the title-page of the only copy of *Avis à un Jeune Médecin*, 1672, which has been located. (Courtesy of the British Museum.)

II. HOW THE INDIFFERENCE OF THE PUBLIC WORKS A WRONG TO MEDICINE.

For my part, in my writings, I have tried to stress the importance of a public solicitude towards medicine. I have described the inconveniences which arise from the neglect with which the public has treated it. I have inveighed against the quacks, who have usurped the practice of it; and I have been moved to pity for those honorable men who have been obliged themselves to

become quacks in order to make a living, or to have employment somewhat in the line of their profession. But you should not be disheartened over this condition. The fault does not rest wholly with the physician; they who are to blame the most oblige physicians to behave as they do. It is true that since those whose duty it is to regulate others, and who alone can remedy the shortcomings of medicine, do not reflect adequately upon the subject, we have no right to be shocked about it; all the more so since they are the sufferers from the irregularities and the dissensions in medicine which come to pass.

III. THAT IT IS NOT FOR ANY ONE INDIVIDUAL TO FIND THE REMEDY.

It is not for you, Sir, who comes before the public possessing intelligence and a knowledge of fine literature, who wishes to advance still further in the sciences, who loves particularly the study of natural history, and who wishes to avoid alienation from your chosen profession; it is not for you, I repeat, who should have some concern for your own interests, to correct the abuses which are found established in civil society. It is for society, which should take a greater share even than you in the health of its citizens, to institute additional measures, and issue a mandate that the science of medicine advance and progress from day to day more efficiently than it has hitherto done, and with more success in the alleviation of disease. You must not lay claim to practice medicine quite differently from others; and all that you should do is to conform to a style as soon as you can, or to a special habit of procedure, with good grace and the approval [of your confreres], each one of whom tried to do the same in order to achieve the promptest establishment of success. You must of course have in mind the cure of the sick, if you can attain to that, but you must also devote yourself to the advancement of your private affairs, and profit from the sale of commodities by which the public benefits.

IV. THAT BAD HABITS ARE NOT EASILY BROKEN OFF.

I have little doubt that before the invention of bread men were long content with acorns; and that even when wheat was sown and flour made, people might be found who had difficulty in deciding to abandon their earlier diet. Each nation has its customs and its deep-rooted absurdities from which it has no desire to swerve. I might recall many examples found among ourselves and in the most ordinary courtesies, presenting perhaps nothing more absurd than uncovering the head in all meetings, or in drinking each others health; thus suffering inconvenience without serving any other purpose. But I should have too much to do if I told you all that I have noticed under this heading, and it will suffice to mention what I heard from an old Scotchman. He assured me that the mountaineers of his country, who are still in a semisavage state, have not agreed to stop entirely the grinding of grain in a mortar, although

they find the provision grist-mills very convenient. How true it is that one has much trouble to break off an old habit!

V. WHAT SHOULD BE THE BEHAVIOR OF A RESPECTABLE PHYSICAN?

Too frank and candid a manner, such as I am about to describe, might not be so successful in a young physician, whose practice as yet would not warrant such an attitude. For can you imagine him, Sir, having this conversation with a patient:—"Although I am disposed to be of service to you, and will undertake your cure as an end to be hoped for, and with God's help achieve success, in order to safeguard your interests, I must tell you that medicine is a very imperfect science, that it is quite full of guesswork, that it scarcely understands its subject matter, nor is it familiar with the things employed to maintain it; that the more enlightened only feel their way in it groping amidst a thick gloom; and that after having considered seriously all the matters which may be useful, collected all one's thoughts, examined all one's experiences, it will indeed be a wise physician who can promise relief to a poor patient." Furthermore, that he will hazard nothing new or very unusual in his case, and that if he is not cured, at least he will do all possible to make him no worse; that he will have his cure uppermost in his mind, and for the honor that will come to him and from the basis of affection which he has for him, will redouble his attentions to his person, and will think of him as much when away from as in his presence, proposing to study his case incessantly, and consult in his library the masters of medicine, and what they have to say about such a case; and finally, that [the patient] having done him the honor to confide in him about so important a matter, he will acquit himself of the duty so well, that if he returns to health as soon as he might wish, he begs him to continue to be the recipient of his friendship, and confirm anew that he yields this friendship to him.

VI. THAT HE WILL BE ILL-RECEIVED BY THE UNLEARNED.

Sir, how do you think that an ignorant person would receive such a speech, who, despite everything, would have to admit that it was the language of an honest man? He would conclude that his physician possessed neither education nor experience; that he had never looked into an anatomy, nor prescribed a remedy; for people usually think that if a doctor knows enough to mention the liver, the spleen, and the hypochondriac region, he knows exactly all the workings of our economy; and because he prescribes some wretched purgatives, they are persuaded that these drugs, in obedience to his behest, go to selected places in the diseased organs to draw out the humors that afflict them. In truth, Sir, I fear that the young physician might not have

occasion to make a second visit to his patient, and that the latter would seek out another attendant who was more positive.

Although I sometimes inveigh against physicians, nevertheless I have no more than a slight appreciation of the deficiencies of medicine, and I flatter myself not infrequently with the thought that a science so essential to the welfare of life should make more certain that it is regarded with esteem. However, it is not likely that the public, which has made allowances for so many other things, is much concerned with this one. Moreover, such a reasonable view is predisposed to by common sense, above all when the help of medicine is needed. Nevertheless, it is very true that even the most skilful of physicians knows almost nothing about internal medicine, and if what he prescribes as a remedy occasionally yields a good effect, it is mere chance, since physicians practice by a certain routine, similar to that followed by the blind from the *Quinze-Vingts*[6] in going about the streets of Paris; or the blind of the provinces, who, not knowing in which direction to turn, would be in danger of being run down. But it is in the interest of everyone to praise those physicians who are above the common run in the practice of their art; even if they know but little of the substance of medicine, they are better than those who know it not at all. Does one not see how much more is known of the anatomy of the cadaver and of the body than was formerly the case? How many ruined palaces, how many cities levelled or beheld at such a distance that we can grasp nothing of them, but of which one would, nevertheless, like to write the history and relate narratives!

VII. THAT ONE MUST PUT UP WITH THE FOIBLES OF THE IGNORANT.

The people are not of this mind, and since, upon this assumption a patient deceives himself, and in fact wishes to be deceived, the physician runs little danger when making use of an innocent deception in promising him more than he is certain of achieving. The wise conversation of an eminent sceptic is too delicate a viand for the common mind, and it is very needful to guard against making use of it, except with the greatest care. To do so would be comparable to mixing too subtle an essence with grosser matter.

Perhaps it will be of more worth later in this dissertation to show what attitude one should assume in such a situation, mingling always a little assertion with a little of the fortitude of apprehension, and keeping always to a

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[6] *Quinze-Vingts.* This was the name of a blind asylum in Paris. In *Sorberiana* Sorbière makes use of a similar illustration, saying, "Physicians, in their knowledge of physic, are like the *Quinze-Vingts* . . . who know nothing of the ins and outs of Paris. . . . Physicians do the same about the human body, of which they know the ways by I know not what routine, which conducts them happily where they wish to go, and to places they know nothing about."

certain middle course between hope and despair; for by measures such as these the skilful physician places his reputation in safety, and keeps the mind of his patient at ease. But it is given to few men to practice thus. What I say to you on this subject consists only of the fancies I have formed, like those one has about an orator, a prince, or a republic; and I have known scarcely anyone, nor you perhaps, except the late M. Walaeus and M. Vallot,[7] upon whose careers we might be able to erect such a model.

VIII. THAT ONE SUCCEEDS EQUALLY WELL BY DIFFERENT WAYS.[8]

However, many others have succeeded in reaching their goal by quite different methods, and perseverance is such a fine quality that in bending one's course constantly toward the same point, one arrives at the objective somehow; whereas those who advance, stopping from time to time, or who fall back, or try for a better way, may never arrive. Nothing matters except to follow steadily the same path; for all human prudence would consume itself uselessly in giving rules by which a physician might attain perfection in his art and gain much in reputation, rather than by another method. I have seen some with whom brusqueness has worked well, demanding of those who had the duty of meeting them, "Where is the patient?", and who, in questioning the patient, would speak as arrogantly as a magistrate might to a criminal at the bar. I have known others who have forged to the front through urbanity, good humor, and flattery. Felix's decoction, and earlier, his roadsters with their green saddle-cloths, and the four footmen in similar livery, all have contributed to make the life of this dashing man of Paris pass happily.[9] Another, in trotting about on foot all day, spouting a little Latin, has conducted his business so well that this language has been worth more to him than a hundred thousand crowns. In some circles a long beard and a solemn appearance in their possessors are regarded as evidence of deep learning, and render the physician having them to be much sought after. Piety, and even a

[7] Walaeus, or Jan de Wale (1604-1649), was the celebrated professor of anatomy in the University of Leyden, who by experiment confirmed Harvey's findings on the circulation of the blood. Antoine Vallot (1594-1671) was first physician to Anne of Austria when she was Queen Regent. Suddenly, in 1652, he entered the field of the scholar, became physician to Louis XIV, and published his *Hortus Regius* when administrator of the Jardin des Plantes. In his practice he used antimonial emetics, laudanum, and quinine, contrary to the general run of the faculty. His critics ceased their attacks when Astruc reported the cure of Louis XIV by an emetic wine.

[8] This chapter heading is a paraphrase of the title of Chapter 1 of the *Essays of Montaigne*, which reads: "That Men by Various Ways Arrive at the Same End."

[9] Charles François Felix de Tassy, d. 1705. He was surgeon to Louis XIV, whom he successfully cured by operation of a fistula-in-ano. In consequence of this success the social position of the French surgical class underwent a considerable improvement, and French surgery was rehabilitated.

cowl or a bracelet rosary, such as I have worn at [Rome, 1654 or 1667], have sometimes a similar effect, and yield virtue to the pumpkins, the mellow cheese, the boiled chestnuts, and to the other remedies issuing from such sources. And, on the other hand, there is the physician who has made it the fashion to represent himself a free-thinker, thus confirming what Pietro d'Abano, the Conciliator, alleged against the definition of a physician, *Medicus est vir bonus medendi peritus*,[10] when he said that this art cannot fail to produce vicious persons, because therapeutics is under subjection to astrology and to Venus, which only create the dissolute. With some only the memory of a much-esteemed name serves to make a cunning man out of a madman or a fool; with others an extensive library, a pallid countenance, a wild look, a very odd style of dress, or some such nonsense, have won a great reputation. And we have seen on the Pont Neuf a yellow ruff win over so many patrons from the practice of the tooth-drawers there, that when he was in turn encroached upon by his confreres, he brought suit against them and made them defend their practice; thus much is it true that people allow themselves to be taken in by outward appearances. It is well to be warned about these things, and then each one can help himself wisely.

IX. THAT THE PHYSICIAN HAS MORE NEED FOR POLITICS THAN ANY OTHER PROFESSIONAL.

There is no profession which asks more of a man than medicine. Neither the lawyer nor the clergyman has to win the good graces of those who consult them. The first has only to speak eloquently for his client; the other has only to utter some fine speeches to those he instructs, and, changing his tone when it seems desirable, permits himself to speak in a domineering way to the conscience of his auditor. One has the law on his side, the other has the Holy Scriptures and the Decrees of the Holy Councils.[11] One is the interpreter of his Prince, the other of the Envoy of God; they both speak with authority in imposing places and in ceremonial dress, whereas the physician presents himself in a chamber, dressed like any other man,[12] among women and the unlearned, with whom he is little reverenced. He has for guarantors only Galen and Hippocrates, and he speaks only about uncertain things, with which everyone thinks it is his right to be concerned, because each pretends to some power of reasoning and to some experience; which are the two wings

[10] "The doctor is a good man skilled in curing."

[11] The Holy Councils or Sacred Congregations of the Roman Catholic Church. The Envoy of God is the Pope.

[12] Before Sorbière's day the long-robed and short-robed barber fraternity had diminished in number and importance. Portraits of the 15th century still show the physician with the long robe, or a short fur-edged pelisse. Garrison states that when the surgeon was assimilated to the status of a physician he assumed the square cap and long robe of the latter.

of medicine, wings which scarcely lift it, or carry it far. Therefore the physician has more need to be clever than the others. He must be constantly on duty, and he has always to be careful to avoid the snares set for him on all sides. For him, and for those who have the honor to serve Princes, there are only the old guides, who can speak out with authority, making game of mockery, and imposing silence to the endless contradictions met with at every turn in this conjectural science. Others have to be all submission and employ all their wits in seeking to please the patient, as well as his attendants. To be sure, it is sometimes difficult to succeed on a first meeting, so on the second the aim should be to win the confidence of the patient; and since one esteems the things that one understands the least, on these occasions the wise physician always has a few doses of nonsense to bestow.

X. THE PHYSICIAN SHOULD MAKE USE OF DIFFERENT VARIETIES OF NONSENSE.

He should do this with prudence, adroitly serving up those bits which appear to him to be more to the liking of those who listen. Thus, among the people and with the persons who are familiar only with the philosophy of the schools, the Galenic varieties will suffice; provided the physician sets them off with several quotations from his Hippocrates. With others, according to their tastes, he will use Hermes Trismegistus, Paracelsus, and Van Helmont; and he will mention something of the new philosophy, with which, it will be appreciated, the practice of medicine accords perfectly well. Then he will finish where he began, by making a few compliments, and extending his very best wishes for recovery. In taking their leave of a patient, I have known physicians to speak in such a manner, and I noted that it was not badly received: that what he had just touched on in a few words, about the practice of medicine, which he aimed to adhere to, was not infallible; nevertheless, he believed that God would bless their remedies; that such would be granted in answer to the prayers of good people, and that the faithful services rendered to his Divine Majesty, as well as zeal and assiduity in worship, would supplement fully any imperfections of medicine. Then in asking for the name of the apothecary from whom the medicine must come, the physician added that he was happy to have such a man, for he was very certain to have excellent drugs; and concluded with assurances of the happy success of his good intentions.

XI. THE FOUR SECTS OF MEDICINE.

Sir, you may not be averse to the method of mingling in the sick room with a crowd of distressed, boring, and often impertinent persons, and perhaps it would be good also for all the sects of medicine, the Empirics, the Methodists, the Chemiatrists, and the Rationalists, which latter is a mixture of all that is

worthy in the first three, to make similar contacts, for they would not find there anything contrary to their maxims. I place the Chemical sect in this list because today it is better regarded than it was when Galen strove against the other two sects in order to establish the Rational, and when Ausonius said, *Triplex forma medendi, quae logos, et methodos, cuique experimentia nomen.*[13]

You know better than I, who have forgotten almost all such things, what these sects were, and the clamor they have made in the schools. I am quite content to refresh my memory a little about them, and that is why I have requested you to accept what I have assembled here in a short review of my ancient studies, and of my own thoughts, for I have always been inclined to indulge in reflections upon what is instructive to me.

XII. THE EMPIRICS.

We must give the Empirics precedence, for neither Serapion, Philinus, Heraclides of Tarentum, Menodotus, Glaucias, nor Apollonius among the Greeks, nor Celsus or Pliny among the Latins, have been the originators of this sect. It is as ancient as man and the other animals; and since their creation until now they have always been retained within it. It serves them even more than our own special tricks serve us, for our distillations, our systems, our arguments, and our experiments do not provide us with remedies more reliable than those suggested to them by instinct. We should have done as they do in seeking out certain remedies for certain maladies; going at once to nature for those that were necessary to them; but we have been unfortunate in failing to search for remedies, or in trying many that were useless or injurious. The serpents choose fennel, the swallows celandine, the weasel rue, the stork marjoram, the wild boar ivy, the elephant wild olive, the partridge laurel, the dog graminaceous plants, the crane rush, and the fowl wall plant. The " signature " [14] of the plants has no association with the above, and there is so little evidence in what is revealed to us about the remedy for the part affected, that what we have that is rational on some plants, lists of which Crollius and others have made, is indeed very little and of small utility. Whatever the conditions, I am not an enemy of the Empirical system. I love its experiments, and I serve it willingly, but I wish that it might be on surer

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[13] Decimus Magnus Ausonius (310-395 A. D.) was a poet and rhetorician, and held a consulship under the Emperor Gratian, whose tutor he was. The text of Ausonius quoted runs somewhat differently in the modern editions. The passage occurs in *Griphus ternarii numeri* [A riddle of the number three], as follows: *triplex quoque forma medendi, cui logos aut methodos cuique experimentia nomen, et medicina triplex: servare, cavere, mederi.* [Medicine also has a triple form of healing, namely, theory, orderly procedure, and experience; and medicine in aim is triple: preserve health, prevent disease, and heal].

[14] The doctrine of *signatures*, by virtue of which a remedy was applied on account of some fancied resemblance, in color or shape, to the disease, such as turmeric for jaundice, was developed by Paracelsus.

grounds, particularly when it fails to confine itself to topical subjects, and when it ventures to try internal remedies. Let us pass to the other sects.

XIII. THE METHODISTS.

Methodism, which has grown from the Rational sect, as a result of distaste felt for the Empiricists, was the sect to which Themison and Thessalus tended. The Methodists sought to avoid the trouble of experiments, in order not to embarrass their endless rules, among which there was inconsistency. They believed that all maladies are to be attributed to two causes, either obstructions or relaxations of the natural channels. Thus, for a cure it was only required to open or close these by remedies with the requisite qualities. If the Methodists had known about the circulation of the blood, and the irradiation of the nerve force, they would have been well confirmed in their opinion. But I cannot yield my approval of the moderation of their views when they declined to make a more careful investigation of the economy of the human body, as if Herophilus and Erasistratus had labored in vain, or were regarded as too cruel, because they did dissections on the living bodies of criminals given them, in order the better to know the conformation and movement of the organs. This was the only method they had for instruction, from which perhaps at some time, at the price of expending a small number of scoundrels, relief could be extended to numberless innocent and worthy people, who could be cured if the nature of their diseases could be discerned. But even the learned have not yet accepted this view, having up to the present time spared those by false clemency who have spared nothing to gratify their unruly passions, or satisfy their selfish interests.

What Galen sought to accomplish by inveighing against the Methodists is worthy of praise, although he has not been very fortunate in discoveries himself, and has not done much better than they have in binding medicine to broader views. But he opened up the field in his Asiatic style, and he was a man well found in reasoning powers, as well as in experience. His writings contain a quantity of good things for which we are obligated to him. It is a pity that a man of such fine mind did not have the benefit of all the advances which have occurred since his days, nor the aid of the newer discoveries in anatomy, and those in medicinal plants and mineral drugs which the chemists now have among their wares.

XIV. THE CHEMICAL SECT.

The Chemical sect has made up a third division in medicine, and they have become famous by virtue of their wise men, rather than because they wished to discourse on their performances. Their methods comprise no more than analyses and syntheses, brought about by means of heat or by some solvent,

about which they do not know very much, either of the action of the process or of the means of regulating it; or not as much as they claim. I have spoken on this subject at length and emphatically in one of my papers, and also on the subject of Glauber, whom I used to see in Amsterdam, so I will not take up again with you what I have already given to the public. It suffices to say that the Chemists are honest artisans who have improved on pharmacy, but who, having been a little more removed than the apothecaries from dissolving and precipitating mixtures, have too soon believed themselves to have reached the final steps in the analyses of substances.

The Peripatetic Philosophers thence derived the four elements. The Chemists resolved the elements into their principles, and in the end believed that salt, sulphur, and mercury were the first principles. But perhaps they are themselves no less deceived than persons who in grammar, being superior only in a knowledge of words to those who divided a language into sentences, believed that they had arrived at the first elements of this science, and boasted of such a discovery. Nevertheless, a word can be divided into syllables, and syllables can be reduced to letters, which would hold much sooner the place of first principles. It is to be presumed also that the Chemists have only gone a step beyond the Peripatetics; and that to go from salt, sulphur, and mercury up to the first principles, there are numerous successions of analyses to pass, which we do not know how to perform, and which we cannot comprehend. This sort of talk, which constitutes the arguments of the Chemists, is so shallow and so frivolous, that I would be ashamed to enter upon it with you. Paracelsus and his fellows of the Chemical sect have done no more than invent high-sounding words, from which they have formed a jargon beneath which they hide the mysteries of their art, and which being interpreted signify nothing by which one may be better served than by the Galenists; although they have made a pretence of taking a stand against these doctors. The Chemists have substituted for the four elements their three principles, with the qualities, the forms, and images of substances, within which knowledge they have included all anatomy, in such a way that to understand medicine well one has only to know the agreement there is between a microcosm and a macrocosm; and in order to practice it, how to join like things together, which is the opposite of the maxim of the others, that contraries are cured by contraries.[15]

XV. THE RATIONALIST SECT.

Although these good people of the Chemical sect are not wholly to be despised, considering the trouble they take, not faltering or failing in their

[15] The Galenic doctrine of *contraria contrariis curantur* was violently attacked by Paracelsus and Cardan, who substituted their doctrine of similars. The old Paracelsian doctrine of signatures and similars received a modified revival in Samuel Hahnemann's *similia similibus curantur*.

zeal of working before their furnaces, I would advise you to adhere to the Rationalist sect, as it is called, or the Reasonable, which is that of Galen and Hippocrates, under whose banners you are enrolled. It is undoubtedly the most learned one, and provided that it is not too dogmatic, it will carry you a long way, and more honorably toward the secrets of nature, than will the others. But it is not necessary to do, as I saw some physicians do, at the home of M. de Montmor,[16] who did not take sufficient interest to more than glance at the dissection which the anatomist Pecquet was making to demonstrate the course of the lacteals; nor [is it necessary] to make such a reply as another physician did to this illustrious promotor of the arts and sciences, at whose home we were assembled, when he was trying to show to one of the most famous physicians of Paris the circulation of the blood and the structure of the animal system, which is so beautiful a scheme. "Really," said this elderly doctor, "this seems excellent to me, and I intend to advise some younger man to defend it in the schools, in order to enliven the discussions with such a neat paradox."

Take good care, Sir, to avoid committing such an impropriety; and since the Reasonable sect is founded on reason and experiment, do not think that these are cut and dried, or that there is no longer anything to be discovered, as the older practitioners attempt to persuade themselves. Be positive, I tell you, whenever necessary, and above all do not allow your interest in natural history, or for those things yet to be discovered, to be stifled. And remember what a wise man of Greece had for a motto, "that he became learned in growing old, and that he grew old in learning." You have joined yourself to a philosophy which has a passion for new discoveries, and which has known how to profit from them. Never refuse those which are presented to you, if you have not been fortunate enough to make them yourself, since you would then be able to demonstrate them; and to this practice you must all your life tend. Do not ever, I pray you, get weary of making dissections, of examining remedies, and of reflecting over the causes of disease, founded on the hypotheses you know, and in a mechanical manner, removed from metaphor, allegory, abstraction, and nonsense, although, to entertain you with this last, which I repeat must be employed, it will be well for you to review every day a few pages of your Perdulas,[17] or of the author in whose works you have made your first studies in medicine.

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[16] Hubert de Montmor was president of the Academy of Physicians in Paris, and dean of the Master of Requests.

[17] *Perdulas.* This may have been some sort of a compendium of medicine. Its derivation is not known.

XVI. THAT IT IS NECESSARY TO GAIN OVER THE SYMPATHIES OF THE PATIENT.

I wish indeed that you might feel a reluctance to follow my counsel, but if it is not less true to declare, *argutiarum omnia plena*, that is to say, *stultorum omnia plena*,[18] why is there sometimes difficulty in joining yourself to the larger number? And so what danger is there in speaking like the others, by contributing something to the scene in which we live, and adjusting ourselves to the methods of practice which are the fashion, and gathering all the advantages one can over the imagination of those with whom we have to deal? For it cannot be doubted that such measures serve to hasten the recovery of the sick, since not only the mind suffers, but it is very often the mind which makes the body suffer; witness the impressions which the caprices of pregnant women transmit to their children, and the cures which have resulted from sensations of joy and of fear when these passions have been excited by chance or design in the imaginations of the very ill. You know the story of the dying cardinal, who in some way was resuscitated following an outburst of laughter which possessed him, when he saw that his servants, who were in his chamber, had brought his monkey with them, and the monkey, at their invitation, had taken the cardinal's red hat and placed it on its head.

XVII. THAT THE IMAGINATION OF THE PATIENT MAY DO MUCH TO BENEFIT HIM.

At this point I might consider more at length those cures which arise from a strong imagination, from charms and talismans, and by bringing forward certain words, or by practicing certain actions which would appear to have no relation to the effects which they produce, and explain to you my ideas on what are called the sympathies and the antipathies of things; and then relate to you in one way or another what I have seen occur sometimes when the "abracadabra"[19] has cured tertian fevers, and tell of others who feel themselves lost unless they do something like taking a pinch of the first herb they find, in a glass of white wine. I have seen the toothache stopped by driving a nail into a letter of the word "Maccabees," written on a board. It is said also that a horse will be pricked in the foot by a nail, if a nail be driven into one of the horse's footprints; and it is believed even today that the first wolf seen causes the voice to disappear; and that bad luck comes to the sheepfold if one meets with a lamb. Vida[20] tells of a peasant whom he had seen at Viterbo, who had the reputation, not only of causing the death of all the

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[18] "All are full of subtleties" that is to say "all are full of follies."

[19] *Abracadabra.* A cabalistic word written triangularly and worn to cure an ague.

[20] Marco Giralamo Vida (c. 1489-1566), an Italian scholar and Latin poet. He was born in Cremona and died in Alba.

insects, (which might not be a bad accomplishment), but also of all the plants in the garden, by merely gazing at them. There was danger that he might bring about a general desolation of the vegetation in passing through the country.

Nam quocumque aciem horribilem intendisset, ibi omnes
Cernere erat subito afflatos languescere flores.[21]

Several years ago one of our friends led into an assembly of physicians, meeting at the home of M. de Montmor, one of those horses suggestive of a hobgoblin; the horse carried a note in his mane, which note stated that lacking it he would walk lame. We abstracted the note, but nothing happened. In Flanders I have several times seen silver offered to a German soldier in exchange for a charm he had to protect him from musket-balls. He would permit anyone to fire a pistol shot at his arm; something he might not have cared to do without a charm. Eventually they tried it out on a dog which lived on the place. If one believed the popular delusions about these things, then the wounds of the dead would open and bleed in the presence of the murderer; the castrated cocks would die in the presence of a man who holds and presses upon one of his own testicles. But let us leave all these fabulous beliefs with what is called the Powder of Sympathy, and with the pretended communication of the vital forces of the wounded with the particles of vitriol which go to meet each other along the length of the thread, which cannot be seen, but which nothing interrupts. I do not wish to enter upon a discussion of all these superstitious practices, which for the most part are dreams of the Cabalists,[22] and which arise perhaps from a false and unfortunate imitation which the father of lies [23] has introduced to render the omnipotence of God suspect in the work of creation.

XVIII. THAT IT IS NECESSARY TO AROUSE THE PASSIONS, ABOVE ALL, JOY.

To return then to the condescension which one must sometimes extend to the sick, and to the skill with which the wise physician should bring feelings into play, even the violent ones as well as those that are milder, I will cite to you what I have read in past days in your Roderico a Castro,[24] concerning a case of prolapse of the uterus. He states that he had seen this organ restored to its normal position, by producing a red-hot iron and making a pretense of

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[21] "For wherever he had directed his terrible ray, there it was possible to see the flowers languish beneath the sudden blast."

[22] The Cabalists were the followers of a mystic speculative system of philosophy which flourished from the 10th to the 16th century.

[23] "The father of lies" was Beelzebub, or the Devil.

[24] Rodericus a Castro was a Jewish physician who wrote a treatise on gynecology, published in Hamburg in 1603.

applying it to the patient. In a similar instance Horace's physician [25] awoke him from his miserly lethargy by making him open his coffers by the bedside and count his money. Gouty patients have been given wings to flee their chambers upon a fire breaking out. When you desire I will induce one of my friends to tell you how he was cured of a sciatica, which had kept him confined to his bed, by an access of anger which made him forget his helpless condition, and permitted him to grab a stick and chase after one of his servants who had been insolent to him. One has seen people of consequence, rich and miserly, who found themselves improved by having their caskets brought before them, from which they spread out their jewels; just as among well-to-do children, to whom when ill, golden chains and other trinkets are given. It is because joy is the greatest remedy there is for good health, or better expressed, it is joy and what arouses it which contribute to the perfect organization of our body. The body must be looked upon as a machine with an infinity of channels. The grosser humors are returned through certain channels, some of the more subtle materials being delivered to the muscles. One must imagine that the vital forces penetrate the body, restore the membranes, breathe through the pores, and sustain animal life by reason of their action. As long as this action is neither too strong nor too feeble, so long will it do no injury to the organs but give them just enough impulse and maintain them in a state of well-being, just as an organ concert is in correct tune when the stops are open and the wind is distributed properly and at a certain rate. I have no doubt at all that with fear and with sadness, and in the more material illnesses, there is some failure in the irradiation of the vital forces, which forces do not flow in an even manner; or they encounter obstacles in their movement. Joy seems to exert such an effect on them that it opens the pores and enables the vital forces to pass to parts where they had not previously penetrated,[26] all of which is quite evident to the eye; and one may notice how the countenance takes on a heightened and more lively color when such a passion is dominant; whereas one sees the vital spirits disappear when sadness and fear are present, the latter acting as if they closed the doors through which these spirits are accustomed to pass.

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[25] Horace's physician was Antonius Musa. He was also physician to the Emperor Augustus.

[26] This pretentious explanation of the physiology (or pathology) of the body, under the influence of joy or fear, harks back to Asclepiades, or to Galen's commentaries on Asclepiades, whose theory asserted that the tissues of the body are pierced with innumerable invisible pores incessantly traversed by atoms, and the various vital phenomena were produced by passage of these atoms through the pores, disease ensuing when the course of the atoms was changed either by dilatation or contraction of the pores.

XIX. DESIRABLE ACCOMPLISHMENTS IN A PHYSICIAN.

Sir, I am led to reflect that with all the fine intrinsic qualities which you possess, outwardly agreeable, with neatness, and an unpretentious humor, it will not be difficult for you to attract a clientele. I am reminded that Michel de Montaigne said that a clever physician advised him to associate with a convivial person with a high color, good humor and good temper, in order to ward off a marasmus and extricate him from the debility of that condition, into which he was about to fall.[27]

If an ophthalmia is contagious, and if what nurses believe is true, elderly persons take away the color from their children's faces when they kiss them; contrariwise, it might well be that a smiling face, a fine appearance, a pleasing voice, and neatness in a physician would contribute to the well-being of a patient, by drawing the vital spirits to the surface through the joy he inspires. Generally that is what happens when it is said of certain physicians that they are more successful in their practice than are others, and they are more sought after because they are more agreeable and more tactful; and from these facts it follows that they have more success with their patients. I do not mean to say that there are not other physicians whom I know, whose native sagacity, particular aptitude in choosing remedies and in diagnosis are not found equally in all medical circles, and who, like the others, manage excellently in these directions and in prognostics. Be that as it may, knowing this, and finding the other intrinsic qualities in two physicians, I would prefer the one who was in the prime of life, who carried himself well, and who possessed gay spirits, to a sulky and forbidding old man who comes into my room coughing, and who retires from it, leaving me with thoughts of Charon or Rhadamanthus.[28]

I do not say, Sir, that I would prefer to such a one a young man who was a little too condescending, who spoke affectedly too much, and who deafened me with his idle talk. I want neither the chatterer, who makes his patient apprehensive of a second illness, nor the taciturn one who has no elegance of discourse whatever; nor him who finds only mirth in mishaps; nor him who always knits his brow; nor him who wears too fine apparel; nor him who comes wearing dirty linen, and who sets all the dogs of the house to barking; nor him who with perfumes of musk and ambergris makes the ladies faint when he approaches; nor him who chews tobacco, or who exhales some more villainous odor. I would desire my physician to have a sweet

[27] It was Montaigne himself whom the physician Simon Thomas recommended to visit one of his patients possessing the convivial qualities described.

[28] Charon, son of Erebos, conveyed in his boat the shades of the dead across the rivers of the lower world. He is represented as an aged man with a dirty beard and a mean dress. Rhadamanthus was the son of Zeus and Europa. After his death he became one of the judges of the lower world.

breath, and I would not disapprove if he always had a cachou in his mouth. I should take pleasure in seeing him with a well-composed countenance, a little pensive, suggesting anxiety over my illness, study me quite leisurely, speak to me amiably, propose remedies with honest assurance, and finally tell me diverting stories. I do not require of a physician that he never converse about anything except medicine, and I am very glad that without losing sight of that subject, he make some digressions into the news of the day, or about ancient history, or about such other matters which he knows I am interested in; and I desire greatly that he unfold with good grace some pleasant story to make me laugh. But if all that is to my liking, it is perhaps not to that of others, and I do not object at all if you proceed differently with those patients who always want the physician to be serious, austere, and gloomy. The greater number in an ignorant world would lose the respect they have for the sciences if they understood them, and for virtue if they should see it spritely. It is on account of this perhaps, that Heraclitus affected obscurity in these matters.

Clarus ob obscuram linguam magis inter inaneis manes,
Quam de graneis inter Graios, qui vera requirunt.[29]

And with a similar intention, Zeno in his time, cultivated a long beard.

XX. THE UNCERTAINTIES OF THE VIEWS ON THE VEINS AND THE PULSE.

In order to accommodate oneself to the credulity of ignorant people, who are curious to know the conditions and the results of an illness, it has been necessary to make a pretence of learning by an inspection of the urine, far more than it can reveal, or more than is yet to be discovered by an inspection of this fluid; for it is nothing but a serous fluid impregnated with salts filtered from the kidney and going to the bladder, which may indicate the condition of these parts, and very obscurely show the contents of the mass of the blood, whence they have been separated from the circuit it has made from the arteries to the emulgent veins in following the great course of the circulation. Nevertheless, one wishes that from it one could guess the state of all the rest of the body, and could learn from it all that was to happen to the body. This method of observing the urine has given rise to a thousand jests, made at the expense of those physicians who have endeavored to express judgment from a method so uncertain.

One wishes also that more things might be deduced from the arterial pulsations than at present can be inferred; whether they come from the

[29] "Distinguished for his obscure tongue, a shade among the shades, rather than for his serious studies among the Greeks, who seek the truth." Heraclitus was a Greek philosopher of c. 540-475 B. C. Zeno was the stoic philosopher, born 488 B. C.

impulse of the blood when the arteries are filled, or are made by a dilatation of these vessels, which have a sort of elasticity. I fear that what is known about this subject may not be very far advanced, and that all this enumeration of the various sorts of pulse, more than thirty, and from which an infinity of others is fashioned, may be created to no purpose and be devoid of evidence; for I defy two physicians who shall have felt at different times the pulse of the same person, to give it the same name, or to make the same description of it. I am sure that each will name it according to his fancy, or according to the diverse names brought forward in his memory. There are almost never two individuals, either sick or well, in whom exactly similar pulsations will occur, and each has his own pulse so far, even as to rate, that I have seen it happen that one observer counted eighteen or nineteen, while the other reported the pulse-rate twelve or thirteen, although seemingly both of them had carried out the examination equally well. There is not at all any fixed standard for this movement, and so the very short time used in feeling the artery is not, in my opinion, either of great value or of great utility. But nevertheless, it is a procedure one must practice, and I do not despair that in time we may be able to derive advantage from it, more than at present; besides, nothing should be neglected in a matter so obscure and for an end so noble and important. For is it not a species of resurrection which medicine undertakes in the cure of the sick?

XXI. ON THE NOBILITY OF MEDICINE.

I speak freely about the nobleness of our art, seeing that it was Pliny,[30] who in some places has treated medicine quite harshly, but who in another passage has said of medicine, *Unam artium, quae imperatoribus quoque imperat.*[31] Before Pliny the *Holy Writing* [*Ecriture Sainte*] had commanded that it be honored, and declared that the King will make gifts to it, that medicine will be exalted by him, and praised in the sight of the great men of all his court.[32] And then there was your Hippocrates, who when the King of Persia sent for him to attend his Premier, Abteritaino, refused to go, saying that he cared more for wisdom than he did for a treasure of gold; but he exposed himself willingly to cross the seas with others called to succor one of the wisest men of the world, Democritus. According to Pliny, Erasistratus, grandson of Aristotle, received from Ptolomeus a recompense of one hundred

[30] Pliny the Elder, born 23 A. D. He perished in the eruption of Vesuvius in 79 A. D.

[31] "One art which gives orders, even to emperors."

[32] This refers to the *Words of Wisdom* by Jesus, son of Sirach (Sira), who lived in the first half of the second century B. C. Garrison, in his *History of Medicine* gives the whole quotation, as follows: "Honor a physician according to thy need of him, with the honors due unto him: for verily the Lord hath created him; for from the Most High cometh healing; and from the King he shall receive a gift. The skill of the physician shall lift up his head; and in the sight of great men he shall be admired."

talents, which in our money, according to Bude [Budée of Halberstadt], would be sixty thousand crowns, for having cured his father, King Antiochus. Crinas of Marseilles left means to build the walls of the city, besides other buildings which he caused to be erected at prodigious expense. Louis XI gave up 6000 crowns every month to his physician, Jacques Cottier. A king of India offered as a pledge to Garcias ab Horto the sum of forty thousand crowns. Pierre Texera reports that the Grand Mogul offered nearly a hundred thousand crowns to Mizarene. Philip II gave his physician Valesius six thousand crowns for an illness of seven days.

XXII. THAT THE PHYSICIAN IS NOT ORDINARILY WELL RECOMPENSED.

Despite all the above, it is only too true that the physician is usually very poorly compensated; and moreover, this is one of the reasons why medicine is very badly practiced; for physicians must run about after several patients at the same time in order to make the liberality of the few recoup them for the ingratitude of the many; whereas, it might be preferable for them to engage themselves to a small number of sick, two or three perhaps, as being calculated quite enough to occupy a physician who might wish to observe accurately all the symptoms which arise, and all the effects produced by the remedies ordered for them. It might even be desirable for all measures to be administered by his own hands, since physicians are very badly served, and very ill-informed about what passes in a situation where they have every right to rule. I have often remarked that they do not dare even to put questions about matters needful for them to know, and that they are contented to ask in a wholesale manner if the patient has slept, and what food he has taken, with nothing said, however, about the things we call non-natural, such as rest, excretion, or failure of excretion, state of the mind, temperature of the air, and an infinity of conditions about which the physician should be informed, and from ignorance of which one makes dangerous mistakes. For it cannot be doubted that bleedings and purgations ordered at the wrong time, and carried out after certain other evacuations, or after certain practices, have often cost the lives of those who would have been well advised if they had done nothing except sleep, take a little sustaining nourishment, or a small amount of some cordial to restore promptly their well-being, or to calm their agitation. Thus the wish that physicians should not be so inquisitive, the dislike of variety in remedies, contempt for the simpler ones, fear of the expense of the more elaborate ones, disobeying the physician, doubt of his zeal or his competency, and calling several into consultation at the same time: all this, I assert, has caused much disorder in the practice of medicine and admirably clears the physicians of blame. I wish to say only two or three words on some of these matters.

XXIII. CONSULTATIONS.

Consultations are the most ill-conceived affairs in the world, unless one resolves when attending one of them to lose the friendship of the physician whose advice is not followed. For it is certain, from the way men are constituted, and in view of the liking they have for their own views, that if the advice of the first physician, ordinarily opposed by the consultant, is not followed, the former will do all that he can not to cooperate, or at least he will not be annoyed if things go badly, or that regret exists for not allowing him to carry on. The remedy that might be brought to bear, for your own interest, if you possessed between you sufficiently good intelligence, would be never to contradict the attending physician, and to confirm all his actions, continuing all that he has undertaken before passing on to measures which he (the consultant) might propose, both thus yielding their reciprocal approval and approbation. Perhaps this consideration will not be without benefit to the patient, in view of the uncertainty of remedies, any one of which is scarcely worth more than another; at least it will tranquillize the by-standers who have heard the discussion, and will always be excellent policy for the physician. But the ambition and vanity of wishing to appear more knowing than another is often of more consequence to some than are these considerations, and at the expense of the patient.

XXIV. ON THE DISAGREEMENT BETWEEN PHYSICIANS AND APOTHECARIES, WHICH HAS DONE AWAY WITH THE SPECIFIC REMEDIES.

I wish to state also that the variance of views which has arisen between physicians and apothecaries has done great harm to medicine, because physicians now confine themselves to one or two remedies only, senna, syrup of pale roses and that of peach flowers, opium, and emetic wine; these, with bleeding and injections being all that the greater number employ in all varieties of illness, whereas the cordials and specifics have become almost unheard of in present-day practice, to such an extent that all that is done for internal maladies consists only in the withdrawal of blood from the veins by phlebotomy and the emptying of the lower bowel by purgatives. In this practice one can easily fall into excesses. It is perhaps not always necessary to clean out the bowel to such an extent, for some pool must remain in this part, and some humors in the mesentery to serve as a leaven for the agitations which should occur in these parts. And further, the blood stream should not be dried up or depleted, in order that there remain enough force to drive the blood through the smallest vessels and by obstructions in them, as in the manner sometimes observed when rain-water is held back in the street, and afterwards made to flow more forcibly to carry away by pressure the mud which fills it, by thinning it out in the stream with a rake. It appears that our

sour-tempered thinkers aim to achieve this effect in the veins by these antidotes [purgatives and bleeding], which suppress some poisons by a sort of incrustation, or by some alteration in shape [of the vessels], by some property which belongs to them. But there is no occasion for me to explain this matter further, since I have testified elsewhere to the apprehension I feel about frequent blood-letting, which has suppressed the crises of illnesses where it has been employed. I am almost certain that it shortens gradually the lives of those who are subjected to it, and emphatically that it is only practiced with impunity by the merest chance in the world; for one cannot hold to any standard in phlebotomy, either as to quantity or to time, or to the place where it is to be done. Up to the present time no rules have been established on the subject, so that it is dependent upon the caprice of him who orders it.

The temerity of apothecaries who dabble in the dispensing of remedies without the orders of a physician has been open to censure, and it was right to curb it. But really the revenge that has come from the practice has been cruel, and the public who has been sent to the market-place, to the apothecary shops, enticed there by some economy, has renounced thoughtlessly the help that could come to them from the cordials and specifics, which are undoubtedly prepared more easily by the apothecaries, from which procedure physicians have come to abstain almost entirely. Either they dare no more to hazard anything themselves, or they do not care to take the trouble to prepare remedies, or because they are not all equally adroit in putting up these preparations; in addition to which they are so jealous of those prepared by others, that a man of quality whom I will not name, but who is well known to you for his highmindedness and curiosity, told me a short story in days gone by, the principals in which I will name to you whenever you wish. One of his neighbors having been seized with an apoplexy, his family sent to ask for a small quantity of an elixir, which being strongly alcoholic has often revived for some time persons who were in deep lethargy to whom it was given. At the least it served to prepare them for death (and that indeed is the chief thing for the good of the soul), by putting them into a condition to think of salvation, and enable them to make arrangements in their domestic affairs. He gave them rather liberally of his remedy, and they were on the point of taking it to the sick man, when the physician, who arrived unexpectedly, opposed its administration, saying that the patient was his, and that he wished to see first what course the malady would take. The course that it took was that the patient died in a few hours from then, and in a miserable state, devoid of all consciousness, from which neither bleeding nor emetics could ever recall him. This story reminds me of another in my experience, and I will share it with you, to avoid finishing with one which is so distressing. A gentleman of my acquaintance finding that his brother was on the point of death, at all events given up by his physicians, and deprived of all sensibility, decided to give him undiluted wine, then spirits of wine in liberal

amount, which having restored him forthwith, those who were present had nothing more urgent to suggest than exhort the sick man to think of God; whereupon the young man, whose mind was troubled and whose temper was naturally fiery, only responded with great extravagance of expression. His brother was very angry with him, and wondered for a time if he was inflamed with a new frenzy; but finally noting the effects of his remedy in restoring the powers of the patient, resolved to give him a second dose, believing that the disorder could not develop further, and that it might be able to effect a new performance of nature that would put matters back again where they belonged. The enterprise succeeded happily, and the dying gentleman is still full of life, despite the prognosis of his physician, through the use of this crude and military restorative.

XXV. CONCLUSION, OPPOSING THE NEGLIGENCE OF THE PUBLIC.

And in all these considerations, Sir, the little attention paid by the public to an art to which one must necessarily have recourse, and which is concerned not less with life than with good health, excuses the attitude assumed by physicians, when they withdraw, each to his own side, caring only for the advancement of their own affairs in the way best calculated to achieve this, or by the more beaten track. They are no more to be blamed in this practice then, since the public is willing that the subject remain where it is, still in the infancy state. No one is any longer astonished over their being at variance over this question; being in considerable numbers and so poorly paid, they must have some employment. No one mocks them any more for their fantastic ideas, or for their frivolous talk, since there is no other language to substitute for theirs. No one is any longer insulted by their ignorance, since the public suffers patiently all the evils that it produces, and because it is very difficult to remedy them effectively, although it may not be wholly impossible. Advice would have to be taken on this subject from intelligent and sensible persons, who have no interest in it except on behalf of the public, and the matter well merits the trouble.

XXVI. HOPES FOR THE ADVANCEMENT OF MEDICINE.

The solicitude that one might be able to inspire in princes to take in the subject of medicine, as well as in commerce, and in the reform of chicanery, might perhaps not be unworthy of them, nor very prejudicial to their reputation. For even if it were not necessary to speak of Phoebus [Apollo] in a matter so serious, nor have recourse at this point to Aesculapius and his sons Podalirius and Machaon, it is certain that Mesua, son of Abdela, King of Damascus, and Avicenna, Prince of Cordova, Sabra and Mithridates, are themselves made celebrated in posterity through medicine, and there are some herbs which still preserve the names of Artemisia and Lysimachus. It is not that I

might have a fancy to persuade a great king, occupied in administering justice to his people, watching the schemes of his neighbors, and giving orders about other things of this importance, to descend to the details of medicine. But since it suffices for commercial companies to have their directors, so for war purposes he [the king] directs his commissaries; and as he sometimes takes over the care of his arsenals to prevent fraud, it might indeed be sufficient for a judicious prince, whatever the state of his health and that of his people might be, to give a glance of his eye over the art which assumes to maintain health; and that he summon experts to advise him what should be done in this direction. But it is a Utopian dream! Be that as it may, Sir, to return to what concerns you, and to tell you what I think, if I had like you to practice medicine, I would be of a mind to speak in this way to an intelligent patient, and above all on my first visit. The discourse perhaps would be well tolerated by a liberal man, and, at any rate, if I was not obeyed, I would withdraw from the business, something which happens quite often with physicians.

Here is what I would say to the patient:

"Sir, if you have the intention of not doing much with remedies in your illness, or of doing nothing at all, and allowing nature to operate, which cures maladies, as our Hippocrates bears witness, you could not have applied to a person who enters more willingly into your design, and would be more prompt than I am to praise the patience and courage that you exhibit in this firm resolution. If you are of a mind to try several remedies for your relief, I feel myself capable, please God, to point out to you a great number of them, having a few good authors on the subject, which I have read and consult daily. If you or your friends have any remedies which I do not know about yet, and which are to your liking, I will not oppose your procuring them, and I will even try to find reasons, experiences, and authorities which confirm you in the resolution you have taken to employ them; but if you challenge yourself a little on your sufficiency in these matters, and that of your friends, and if you presume to know something of my studies, my experience, and my affection, you will allow me to carry on, if you please, and I can assure you that I will proceed with as much circumspection for you as for myself. Upon which I dare hope, with God's help, for a happy outcome. It is for you, Sir, to tell me which of these three ways you wish me to employ in this conjuncture, and to order those who serve you that I be exactly obeyed."

That is a little how I should deal with him. I say no more to you on the subject, save that I am, Sir,

Your very humble and very obedient servant,

De Sorbière.[28]

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[28] In the collation of *Avis à un jeune Médecin* previously given it will have been noted that the book ends with an "Ode on the Death of Samuel Sorbière" by Jacob de la Fosse,

ACKNOWLEDGEMENTS

My first knowledge of Sorbière was derived from *English Essays from a French Pen. A Journey to England in the Year 1663*, by the late Hon. Jules J. Jusserand. London: 1895.

I am further indebted to the Hon. Mr. Jusserand for suggestions of value in preparing the earlier portions of this paper. Fathers Reynolds and Coady of St. Matthews Parish, Washington, D. C., and an un-named associate in Georgetown University were kind enough to assist in the translation of Sorbière's Latin letter. I am indebted to the Rev. H. H. A. Corey of Honolulu for translations of the Latin texts in the *Avis*, 1670, and in other volumes by Sorbière. Professor Albert G. A. Balz, Corcoran Professor of Philosophy at the University of Virginia, was gracious enough to send me a copy of his article on Sorbière in the *Philosophical Review*. I have quoted freely from his paper. Professor Vincent Guillotin, Professor of French Literature at Smith College, has also written on this subject, particularly on the *Voyage to England*, and I have to acknowledge material benefit from a reading of his work on Sorbière.

I am grateful to Dr. Owsei Temkin for several valuable suggestions made to me during the writing of this paper.

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of the Missionary Congregation in Paris, "in sadness," in May, 1670. I have chosen to omit the translation of the ode since it adds nothing to our knowledge of the career of the subject whose death is deplored.

CORRESPONDENCE AND REPORTS

Report of the Meeting of the Scientific Memoranda Sub-Committee of the Chopra Committee for Review and Resuscitation of Ayurveda (Ancient Hindu Medicine)

One of the earliest acts of the "Interim Cabinet" led by Pandit Nehru was the appointment of the "Chopra Committee," to advise the Government of India on the future shape of medical relief and medical education, with special reference to the status and importance to be given to the indigenous systems of medicine in the reorganisation of medicine in free India.

The Chopra Committee found itself in a difficult position with regard to the academic and scientific aspects of indigenous systems. They appointed a Scientific Memoranda Sub-Committee, but even this Sub-Committee felt the necessity to call, for a conference or consultation, a number of acknowledged authorities on various branches and aspects of Ayurveda.

About 20 experts from various parts of India were requested to assist the Scientific Memoranda Sub-Committee. They were invited to Poona, at government expense, provided with accommodation and boarding in the premises of the Servants of India Society, Poona, situated in delightful surroundings. The weather was the ideal cool weather of Christmas time. The Conference and discussions were first programmed to last for one week. Actually, nearly ten days and nights, with short breaks for meals or sleep, were fully utilised for these highly interesting, academic discussions of many complicated problems. A list of persons invited indicates the extent and variety of the special branches represented at the Poona Conference.

Here I feel tempted to say at least something about some of the outstanding personalities at the Conference. It was a very happy idea of Dr. Laghu, Convener of the Scientific Memoranda Sub-Committee of the Chopra Committee, to open the proceedings of the Conference by calling upon every invitee to give a short autobiographical account of himself, bringing out the individual's connections with Ayurveda and allied sciences and his special studies or contributions to the subject. If I had time, I should have reproduced exactly what every invitee thought fit to say about himself. There is no doubt, however, that every one of them was an expert in one aspect or other. There were the orthodox, conservative pandits, whose dress and simplicity and ignorance of any language except Sanskrit or regional language, reminded us of the ancient scholars of India, untarnished by any modern influences. There were some, however, who had the learning of the East and, at the same time, showed a remarkable degree of scientific spirit and progressive ideas, without being over-fond of blind imitation or following everything modern. Veterans and pioneers of the renaissance of Ayurveda, organisers of Ayurvedic schools, writers of learned commentaries of Ayurveda, teachers of

Ayurveda, principals of Ayurveda colleges, were all duly represented, and drawn from different provinces. There were nearly half a dozen graduates in modern (European) medicine, who had for some decades devoted themselves to the study and teaching of Ayurveda. Amongst these, the oldest in age but the youngest in spirit and vigour was Dr. A. Lakshmipathy, a former Principal of the Madras Ayurvedic College, and one of the most enthusiastic advocates of Ayurveda. He has been preparing and publishing a series of volumes called *Ayurveda Siksha* (An Encyclopedia of Ayurveda). The most powerful voice at the Conference was perhaps that of Dr. Pathak, Principal of Ayurvedic College, attached to the famous Benares Hindu University, the only Indian university which had for some years a Faculty of Medicine awarding a degree in Ayurveda. Dr. Pathak could talk fluently with great learning, interspersed with humour, in Hindu, Gujarathi, Sanskrit, and English. Dr. P. M. Mehta, M. D., M. S., Chief Medical Officer, Nawanager State, is the founder and organiser of an Ayurvedic College, and an Ayurvedic Research Institute, on a most ambitious scale at Jamnagar in the enlightened State of Nawanager. He is also actively engaged in the preparation of an authoritative edition of *Charaka Samitha* in six volumes with an English translation and a concordance. Dr. D. N. Banerjee, M. D. (Berlin), Professor of Pathology, in Kar. Medical College in Calcutta, has, during the last few years, published a number of articles on Ayurvedic physiology and Ayurvedic pathology in which he attempts to explain the Ayurvedic terms, phrases, ideas, and theories, in terms of modern anatomy, physiology, and pathology. Dr. Savanoor, Dr. Agashe, and Dr. Apte are also teachers and writers on Ayurveda, highly respected for their knowledge of some aspects of Ayurveda.

Of all the invitees, I thought I was the only person who was neither an Ayurvedic practitioner and teacher, nor an allopathic doctor who had become a convert and crusader for Ayurveda. I felt constrained to confess to the Conference that I was labouring under certain disadvantages, which may be also considered advantages. I happened to be Professor of Physiology in a medical college at Madras. I had never identified myself with the protagonists or antagonists of Ayurveda. I have read Ayurveda only to compare the old knowledge with our modern science. My interest was mainly a historical study of the origin of Ayurveda and the evolution of anatomical and physiological ideas. My knowledge was chiefly derived from English and Telugu translations of the Sanksrit classics. I knew, therefore, that I had to listen to and learn from acknowledged masters of Ayurvedic terminology and commentaries. So, in these two respects, I started with a clean slate without prejudice and presumptions or convictions. I took notes throughout the discussions, read them in the evening, and corrected them wherever necessary, with the help of Sanksrit scholars.

The first subject on the agenda, namely "Panchabutha Theory" (the physical or five-fold physico-chemical basis of the universe and the human body) was discussed in detail by the "Darshanicks" and Logicians, while the Ayurvedic medical scholars gave a brief exposition of the theory, as described by the medical authors. Professors of modern physics and chemistry gave a brief sketch of the modern conceptions of matter and endeavoured to stress the similarity between the ancient and modern theories.

The most important discussions centered around the "Tridhosha Theory" the

pivot of Ayurvedic physiology, pathology, and therapeutics. The entire conference split up into two groups for this purpose. The first group consisted of Ayurvedic pandits, editors of classical texts, and teachers of Ayurveda. They held day and night sessions for one week and, after very learned disputes, agreed on certain points and agreed to differ on the rest. On the basis of the greatest common measure of agreement, a statement was submitted giving definitions and explanations of *vavu, pith* and *kaph,* according to classical authorities, the seats of *tridhoshas,* types and manifestations of the predominance of one *dhosha,* etc. That statement deserves to be printed and read by all lovers of the history of medicine, as well as by all physiologists and pathologists. I hope to be able to get a reliable translation for publication. The second group worked simultaneously to explore whether ancient and modern concepts had any points of agreement and, if so, to what extent. The report of the "Osman Committee," submitted in 1922 to the Government of Madras, was taken as the basis or starting point for discussion, but very soon it was left behind and fresh viewpoints and more recent trends were taken up for discussion. The discussions were initiated by Sree Yadavajee Tricumjee, the learned editor of Sanskrit Medical Classics or by the learned Principal of the Benares Hindu University. Throughout these discussions, I played the role of a questioning student and had to oppose or resist any attempt by those familiar with modern ideas to stretch a point or twist an idea. I was very unhappy throughout but I felt that it was my duty to state the facts and concepts of modern science, as we understand them, whether an apparent agreement with the Ayurvedic physiology was possible or not. I could very often see annoyance, if not irritation, on the faces of my colleagues.

The third topic, though important from practical and therapeutic aspects, did not take much time, since most of the scholars were agreed on the definition of the terms *rasa, guna, veerya, vipaka, and prabhava.* These are the Ayurvedic terms to describe, classify, and use the drugs for different therapeutic purposes, according to taste, qualities, properties, actions, etc.

At the end of our discussions, both the groups met again for a general discussion and final decisions. After another two days, spent in further clarifications and elucidations of the three topics, the entire Committee came to a unanimous conclusion. As far as the discussion proceeded within the limited time at our disposal, there appeared to be a possibility of explaining some of the basic concepts of Ayurveda in broad terms of modern medicine. There seemed to be a parallelism to some extent. The discussions and suggestions of the Conference should form the subject for further detailed investigations and research on an intensive scale. This recommendation of the Scientific Memoranda Sub-Committee has been handed over to the Chopra Committee for their use in making final recommendations to the Government of India, on the place of indigenous systems of India. Whatever the recommendations of the Chopra Committee, or the executive action of the Government of India may be, the Scientific Memoranda Sub-Committee and the Conference convened by it at Poona have revived interest in the study of the academic and scientific basis of Ayurveda, apart from the practical and utilitarian aspects, the administrator desires. To leave the discussions and suggestions in files will be criminal neglect of national culture. The establishment of a regular Institute of Ayurvedic Research, providing for literary, textual, and scientific investigations, on a cooperative basis, is the least that can be done.

D. V. S. Reddy

ANNOUNCEMENTS

MEETING OF THE MEDICAL LIBRARY ASSOCIATION

The Medical Library Association will hold its 1950 Convention on June 19-22, at Boston, Mass. The Boston Medical Library will be host and hotel headquarters will be at the Hotel Kenmore.

An address on " Medical Libraries and Librarianship in Great Britain " by Mr. William J. Bishop, Librarian of the Wellcome Historical Medical Library, London, will be one of the outstanding lectures at the meeting. The " Symposium on historical source material in medical libraries " and conducted visits to the libraries of Harvard, Massachusetts Institute of Technology, Massachusetts College of Pharmacy, and the Massachusetts General Hospital will be of special interest to all medical and scientific librarians.

WELCH CENTENARY CELEBRATION

This year marks the one-hundredth anniversary of the birth of Dr. William H. Welch on April 8, 1850. The event was commemorated by the Johns Hopkins University and the Johns Hopkins Hospital on April 15, 1950. A meeting took place in the Hurd Memorial Hall at which President Detlev W. Bronk presided. Addresses were given by Dr. Allen W. Freeman, Dr. Ernest W. Goodpasture, Dr. Alan Gregg, and Dr. Richard H. Shryock, and a sound motion picture of Dr. Welch, made in 1932, was presented. The meeting was followed by an invitation tea in the Welch Medical Library. In the evening a dinner was given at the Sheraton Belvedere Hotel at which the main address was delivered by Mr. Abraham Flexner. Dr. Sanford V. Larkey arranged an exhibit illustrating the life and work of Dr. Welch.

The Lane Medical Library, Stanford University, has prepared a centennial display honoring Dr. William H. Welch.

The American Association of the History of Medicine, at its twenty-third annual meeting, Boston, Mass., devoted its evening session on May 21 to the Welch Centenary Celebration. The speakers were Drs. Cohen, Shryock and Temkin, and the Welch sound motion picture was shown.

The July-August number of the *Bulletin of the History of Medicine*, which will be dedicated to the memory of Dr. Welch, will carry a more detailed account of the various activities.

NATIONAL NEWS

Maryland

The ninth course of the Hideyo Noguchi Lectures was given at the Institute of the History of Medicine of the Johns Hopkins University on April 26-28, 1950. Joseph Needham, F. R. S., Sir William Dunn Reader in Biochemistry, Cambridge

University, was the lecturer, speaking on the general subject, "Some Aspects of the History of Chinese Science." The individual topics covered were:

April 26: "The Fundamental Ideas of Chinese Science"
April 27: "Human Law and Laws of Nature in China and the West"
April 28: "Some Chinese Contributions in Biology and Medicine."

New York

On March 28, 1950, the Mount Sinai Hospital held a seminar in the history of medicine. The program, representing an "Homage to Pavlov," was as follows:

"The Pavlov Pouch and After," Franklin Hollander, Ph. D.
"Pavlov's Contribution to the Study of the Pancreas," Alexander Richman, M. D.
"Pavlov and Modern Psychiatry," Sydney Margolin, M. D.

Discussion opened by Richard Brickner, M. D.

Death

Dr. Francis R. Packard of Philadelphia, the former editor of the *Annals of Medical History* and author of the *History of Medicine in the United States* as well as of many other medico-historical publications, died in Philadelphia on April 18, 1950. The *Bulletin* plans to publish an obituary of Dr. Packard in a forthcoming issue.

NEWS FROM ABROAD

Sixth International Congress for the History of Science

According to the revised provisional program as announced in the *Archives Internationales d'Histoire des Sciences* (April 1950, pp. 399-405) the Congress will take place August 14-21, 1950, and will comprise five sections. Section 4, History of Medicine, will represent the XIIth Congress of the Société Internationale d'Histoire de la Médecine, Prof. Laignel-Lavastine and Dr. Schlichting presiding. Apart from the two general themes for the entire Congress ("Influences and Precursors" and "Relations and Interchange between East and West") the following general subjects have been suggested: (1) history of medical iconography, (2) history of medical folklore, (3) history of syphilis, and (4) history of food and nutrition. Those interested in further details should consult the announcement in the *Archives Internationales* mentioned above, or should write directly to Prof. Ir R. J. Forbes, Haringvlietstraat 1, Amsterdam Z, The Netherlands.

Meetings

Announcements of the following meetings were received:

Medico-historical Section of the Svenska Läkaresällskapets, March 15, 1950.
Instituto Brasileiro de História da Medicina, April 19, 1950.

Scotland

The University of Edinburgh, for the summer term 1950, announces a series of lectures entitled "A Retrospect of Medicine and Science" to be given by Dr. Douglas Guthrie and two guest speakers. The program is as follows:

April 18: "The Science of Retrospection"
" 24: "Primitive Magic and Present-day Belief"
May 1: "The Mechanical View of Life"
" 8: "The Geographical Factor in History"
" 15: "A Survey of British Dentistry, 1685 to 1921"
Lecture by Dr. J. Menzies Campbell, Glasgow.
" 24: "Simple Herbs and Synthetic Remedies"
" 29: "The Way of the Investigator"
June 5: "Teacher and Student in Medical Education"
" 12: "Chemistry from Alchemy to Atoms"
" 19: "The Medical Man in Literature"
" 22: "Social Medicine in the Nineteenth Century"
Lecture by Prof. R. Shryock, Johns Hopkins University, Baltimore.

Switzerland

According to an article by H. Buess in the *Basler Nachrichten* of April 14, 1950, Swiss medical historians met in Pura, Switzerland, early in the spring. The scientific sessions were held at the home of Dr. Henry E. Sigerist and included papers on older Swiss physicians and the history of Swiss military hygiene by Ch. Salzmann, E. Hintzsche, and H. Buess. Dr. Sigerist gave a survey of the present status of medico-historical research and teaching and also read a paper on the beginnings of ancient Greek medicine. Other subjects discussed were: the early history of the physiology of the liver (Nikolaus Mani), John and Charles Bell (Edgar Goldschmid), and Toynbee's *Study of History* (Eduard Fueter). A similar meeting of scholars from English-speaking countries is planned for the late summer.

EMERSON CROSBY KELLY. *Encyclopedia of Medical Sources.* Baltimore: The Williams and Wilkins Company, 1948. v + 476 pp. $7.50.

With the ever-increasing rate of medical literary production, the need for quick orientation has become very acute. Moreover, "orientation" has many facets. There is need for a quick announcement of the current output in the various fields. There is need for specialized bibliographies that bring together past and present contributions to a subject. And there is definite need for the kind of orientation which Dr. Kelly offers in the present book. He found that a work in whose writing he himself had assisted "had put McBurney's point in the wrong place." On another occasion, he had to spend much time in finding the meaning and original description of Homan's sign to which some article had referred. These personal experiences made Dr. Kelly wonder "how many other pieces of medical information are incorrectly used, how much time is spent in finding original descriptions and how incorrect are the titles of articles and volume numbers with pagination which have crept into the literature" (p. v). As a result, he began to compile the material that is embodied in this encyclopedia of medical eponyms and original work. Several thousands of authors are listed in alphabetical order with indication of origin, dates, and specialty. Under each name there follow the respective diseases, operations, signs, tests, treatments, etc., together with exact bibliographical references. The usefulness of the book is enhanced by an index that lists the various subjects with references to the names of the authors (e. g. IMPETIGO Boekhart, Fox, Hebra, Morrow).

Dr. Kelly was eminently qualified to prepare this *Encyclopedia* which offers an important tool of very practical value to all medical historians. He has long been known as the editor of *Medical Classics* where he made available some of the sources we find listed in the *Encyclopedia.* Since these sources are quoted in the original languages in which they appeared, misprints of foreign titles were probably not altogether avoidable. It is this reviewer's hope that the number of such typographical errors will be further reduced in a second edition. It is likewise his hope that a second edition will soon prove necessary since the book can be recommended to all physicians and everybody interested in medical history.

OWSEI TEMKIN

HENRY R. ZIMMER. *Hindu Medicine.* Edited with a Foreword and Preface by LUDWIG EDELSTEIN. Baltimore: The Johns Hopkins Press, 1948. lxxii + 203 pp. Frontispiece. $4.00.

Before he was called to a classical chair at the University of Washington, Dr. Ludwig Edelstein, associate professor of medical history at the Institute of the History of Medicine of the Johns Hopkins University, rendered us all a great

service in editing Professor Zimmer's study of Hindu Medicine and in giving it that human touch that was the one thing needed to make it intelligible to us all. Edelstein and Zimmer had been good friends at Heidelberg for a quarter of a century and it was that intimacy that gave Edelstein an insight into Hindu medicine and also into Zimmer's scholarly mind. To Zimmer, for example, the symbolism of the chessmen on a chess board was revealing. "To him, the king on the chessboard—this monarch who is so entirely dependent on his subordinates for his defense and rarely capable of taking a piece by himself—was the exact copy of the Hindu king who in spite of all his might is more endangered than all his subjects and must always work through his courtiers." Zimmer realized, also, that "Hindu fine arts, like Hindu literature, must not be judged by aesthetic standards alone. The temples and their statues reflect religious experience and teaching." Here were two of the characteristics of Zimmer's work that Edelstein discovered and has set down so clearly for us: the symbolisms of life and the intensity of religious experience in India.

As he pursued his studies further, and delved into medicine, Zimmer discovered that medicine was "the best representative of Hindu earthly life and wisdom." Gradually, he discovered the fundamental attitude of the average Hindu toward the medical art. "His confidence in medicine is great. Yet the value of medical care is measured by man's higher destination. The sound body is, and ought to be, made the instrument of spiritual experience through which one becomes conscious of the indestructibility of one's true self, of that part within man which is behind his individuation."

Edelstein discusses for us the relation between Hindu medicine and Greek medicine. "Greek physicians in the sixth century B. C. lived at the court of the Persian kings to whose empire India belonged. Indian troops were among those whom Xerxes led against Greece in 480 B. C." Yet, while there was interchange between the two civilizations, uncertainties of chronology make it impossible to say what was the exact nature of the mutual influence. There were many parallels. Hindus, like the Greeks, taught of six essences or qualities or flavors. Both cultures were concerned with the theory of humors. Before 700 B. C. there were but three humors recognized in India, "while the fourth one, blood, was added later in the works of Caraka and Suṣruta." It appears that the really startling observations of the Greeks were not accepted by the Hindus. While there were many coincidences, there were also many discrepancies. "The more archaic system of the Hindus apparently was incapable of influencing Greek medicine and, in turn, remained outside the impact and spread of the Hellenistic achievements."

It is well known that the "earliest documents of Indian medicine are found in the metrical parts of the ancient tradition of the Vedas, mostly in the Atharva-Veda, where they appear among seven hundred and thirty-one hymns, charms, and incantations, which belong to the first centuries of the first millennium B. C. Some, presumably, go back to the second millennium and, at least in part of their substance, to an even earlier period. . . . These Vedic records of early medicine are couched in terms of imprecations against demons, sorcerers, enemies; of charms for expelling diseases wrought by demons or sent by the gods as a punishment for man's sin; of incantations intended to impair health, longevity, success and victory, sex-attractiveness and manly vigor."

One of the greatest tributes ever paid to Hindu medicine was that of the founder of Buddhism in post-Vedic times. The Enlightened One set down the Four Noble Truths of Buddhism, making them correspond exactly to the four successive problems which the Hindu doctor faces when he treats a patient. These are, first of all, are the complaints of the patient real or is he only seemingly ill? Second, with what kind of suffering is the patient afflicted and what is its origin? Third, is the condition curable? If it is not curable, the doctor is supposed to withdraw; but if the disease seems curable, then the fourth question is to be asked: what kind of treatment is indicated for the malady?

The three great medical authorities of Hindu medicine were known as "The triad of the Ancients," Caraka, Suśruta, and Vagbhata. Their contributions, their understanding, their leadership, in the whole field made them stand out fully as prominently as the creative medical spirits of Greece or of any other culture.

Here we have the work of a great scholar, who was able, not only to search out the original texts, but to bring before us of the Western world a conception that has not been attained before. Would that we might have interpretations of Iranian and Arabian medicine as profound and as lucid!

EDWARD H. HUME

AXEL GARBOE. *Thomas Bartholin*. Et bidrag til Dansk natur- og lægevidenskabs historie i det 17. aarhundrede (A contribution to the history of Danish natural and medical science in the seventeenth century), Vol. I. Copenhagen: Ejnar Munksgaard, 1949. 212 pp. Ill. Dan. kr. 21. (Acta Historica Scientiarum Naturalium et Medicinalium, edidit Bibliotheca Universitatis Hauniensis Vol. V).

This is the first of two volumes dealing with the life and work of Thomas Bartholin (1616-1680), the famous central figure of Denmark's "golden age" in medical science. He wrote much, and much has been written about him. Dr. Garboe therefore asks in his preface: Why another book? He feels that during the three centuries separating Bartholin from our time much sediment has collected and set like concrete around his figure, in the form of clichés and facile, partly unfavorable, comments, so that he has become a classic instead of a human being. To this fossilized Bartholin he proposes to apply hammer and chisel. This is a sensible and commendable undertaking, for even if there were not much fresh material—which there is—the old can be set forth in a clearer light according to the old saying *non nova, sed nove*. One of Dr. Garboe's countrymen, the historian Troels Lund, said: A piece of historical writing is only in part the work of its author; it is just as much a manifestation of the time to which he belongs—wherefore history must be written again by each generation.

The portrait of Bartholin which the author sets out to illuminate was slowly built up with strokes more or less smoky, and comes down to us something like this:

The almighty of the university; the most famous man in his numerous family, members of which he promoted; a man of great charm, ability and learning; the perfect type, perhaps, of the old Greek rhapsodist who in beautiful phrases with

sonorous and polished delivery (Bartholin is said to have spoken a beautiful Latin) enthralled his listeners. But, his critics objected, the sound of what he said remained while the sense was lost. It was said that he rushed to his desk as soon as a new discovery was pending, without necessary proofs. *Nuper* and *nuperrime* were favorite words. Olof Rudbeck, the brilliant Swedish scientist, who discovered the lympathic system independently—and, according to Haller and Daremberg, before Bartholin—gave the credit of Bartholin's work to Michael Lyser, his prosector, in such words: *Quod enim sine eo potes? Mirum vero te aliena manu inventa pro tuis crepitare.* Daremberg said: "*Plus érudit que savant, Bartholin n'a pas toujours vu par lui-même et il embrouille ou compromet les démonstrations d'autrui, comme cela lui est arrivé dans la question présente, surtout dans ses premières dissertations.*" Danish critics asked: Why did he so abruptly stop his anatomical investigations? Why did he send Lyser to one of the provinces instead of making room for a man of his ability at the university? Why did he both honor and turn aside a man like Steensen?

In short, the consensus of opinion seemed to be that he was not the great anatomist his learned contemporaries judged him, but that in spite of all his faults, in spite of his synthesis of science and superstition, in spite of his nepotism, it was due to him that the *Domus Anatomica* of Copenhagen in his time became a beacon light which attracted students and savants and reflected honor on a small country which in the preceding century could boast of but one man of European reputation, Petrus Severinus, the great Paracelsist.

Dr. Garboe, as manysided as his subject, theologian, scientist and social worker,[1] presents the facts as he found them, leaving the reader to form his own opinions, in the manner of the old Icelandic writers of history. He builds up his story like a mosaic, adding detail after detail concerning Bartholin's family, early education, and ten-year "Wanderjahre" in Europe. Bartholin studied at Leyden, Paris, Montpellier, and especially at the beloved Padua. He visited Genoa, Naples, Sicily and Malta, making many observations, often wrong and sometimes fanciful. Like many a northerner he fell in love with Italy, its sun and warmth, which had cured his weak lungs, and he put off the return to Denmark as long as possible. In 1645 he received his doctor's degree at Basel, a family tradition, as both his father, Caspar Bartholin, and his maternal grandfather, Thomas Fincke, obtained their degrees there. He and his companions lingered as long as possible in Paris, Holland, and other places and did not reach Copenhagen until the autumn of 1646 where he remained the rest of his life. In December, 1647—to get a foot in the door of the university—he was enrolled in the Faculty of Philosophy. In 1649 an addition to the medical faculty, especially for him, enabled him to begin the teaching of anatomy. The story of the first volume ends in 1656 when Bartholin had become *Medicus primus* at the university, had discovered the lympathic system and could answer to Rudbeck's accusations: that he already had had a surfeit of honor and hated quarrels—*sufficit mihi credo mentem recte consciam.* Bartholin gazed at the heavens with the Galileians, had fully accepted Harvey's discovery,

[1] Dr. Garboe has published several articles on the history of science and medicine both in Danish and other periodicals.

and was at the time engaged in a battle of words with Jean Riolan regarding the lymphatic system.

Has the author succeeded in bringing young Bartholin back to life? Yes, he is down on paper in this book, alive and kicking: there is not a dull moment in the book. There are many excellent illustrations as well as interesting footnotes.

Aside from the story of the young doctor, Dr. Garboe has not failed to sketch the historical background. In the seventeenth century there were only seven years in which there was no war going on, and Denmark had its share. In Sweden the kings were all born warriors from Gustavus Adolphus to Charles XII, and Denmark was attacked some five times. The English and Dutch had a way of turning up with food and supplies wherever it looked as though one side was getting the upper hand, which would interfere with the trade of the Baltic. There were fearful epidemics. In 1654 Copenhagen, with the population of only 25,000-30,000, experienced the *pestilentia magna*. Nine thousand died; the university was closed, the poor students remaining to carry corpses; all who could left the city. In Scandinavia witch-fires were still burning, ghosts walked, and contralto Earth, according to Kepler, was singing her plaintive Mi Fa Mi-song, meaning Mi-sery and Fa-mine, adding her bit to his harmony of the spheres, beginning with Saturn as basso profundo, then Jupiter as bass, Mars as tenor, Earth contralto, Venus soprano and ending with Mercury as falsetto. After all that glorious nonsense, "the genius of the inspired dreamer awakens" and Johann Kepler announced his Third Law. That was often the way in the seventeenth century.

ANNE TJOMSLAND

RÜDIGER ROBERT BEER. *Der Grosse Haller*. Säckingen: Hermann Stratz Verlag, 1947. 137 pp., frontispiece portrait.*

It is strange that we do not yet have a truly satisfactory biography of Haller. There is no lack of sources: his own works, hundreds of them filling many shelves, thousands of letters, diaries, and the testimony of many contemporaries who were in touch with him and felt attracted or challenged by his personality. Zimmermann's biography of 1755 [1] is still an important document and Hirzel's book published in 1882 [2] is the only detailed biography we have. It contains a great deal of information about Haller's life but, having been written by a historian of literature, it can not even attempt to do justice to Haller's scientific achievements.[3]

The excuse usually heard for the lack of a comprehensive biography is that Haller's genius was so universal that no historian was ever prepared to draw a true picture of his life and work. The task, indeed, is gigantic in the case of a man who

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* The book is sold in Switzerland for Fr. 4.00, or about one dollar.

[1] J. G. Zimmermann, *Das Leben des Herren von Haller*, Zurich, 1755.

[2] L. Hirzel, *Albrecht von Hallers Gedichte*. Vol. I, Einleitung; Hallers Leben und Dichtungen, Frauenfeld, 1882, reprinted 1917.

[3] Stephen d'Irsay's book, *Albrecht von Haller, eine Studie zur Geistesgeschichte der Aufklärung* (Leipzig, 1930), is a brilliant essay which tries to locate the scientist and philosopher Haller in the intellectual climate of the period.

wrote poetry, political novels and theological works, books on botany, anatomy, embryology, physiology, and other fields of medicine and science. Yet the period of Enlightenment and, before that, the Renaissance produced many men whose minds were just as versatile and who did find biographers. Hence, there is no reason why a historian should not let himself be tempted by a task which, difficult as it may be, is extremely promising as it reflects so many facets of one of the most fascinating centuries of Western history.

In the meantime, we must be grateful for whatever studies on Haller we get and the present contribution is most welcome indeed. The author is a literary man and does not discuss Haller's scientific work. He obviously goes into more detail so far as the literary work is concerned, but his chief purpose is to give a picture of Haller, the man, to portray his character, and in this he has succeeded extremely well. The book is warmly written, in a colorful style, with a deep feeling for the landscape and whole environment in which Haller's life unfolded. The author was able to consult family papers which apparently had not been used before and this helped him in appreciating certain traits of Haller's character more strongly than his predecessors. I would like to mention only a few points that I found particularly convincing.

Haller owed his tremendous reputation primarily to his scientific work. He was a scientist if there ever was one, but his ambition was to be a statesman, a ruler of people. This explains why he left Göttingen at the height of his career; he did it first of all in the hope of finding a field of political activity in the state service of Berne. His early poems all had strong social and political implications. He exposed and attacked the corruption, the loose morals, the artificial ways of his contemporaries, particularly in the cities, and called for a simple life with more justice, more equity, more virtue and love. But he was not satisfied with being a preacher in the desert; he wanted to practice what he taught, wanted himself to be a good ruler to the people. And I fully agree with the author when he says that the six years that Haller spent as director of the salt mines at Roche (1758-1764), during two of which he was also deputy governor of Aigle, were the happiest years of his life, the years of greatest fulfillment. It was a period during which he was able to combine his many interests. He was a good ruler to the people in the old patriarchal sense, was head of an enterprise to which he could apply his scientific knowledge, in a region that was a paradise to the botanist, and with enough leisure to complete and publish his *Elementa physiologiae*. There is no doubt that no honor bestowed by king or emperor pleased him more than the delegation of peasants who came to thank him for what he had done for them, when his term of office was over. After 1764 when further government service was denied him—except as a member of various commissions—he formulated his political credo in three novels.

Another very interesting trait that is strongly developed in this book, is to be found in the contradictions and conflicts in Haller's personality. A scientist who wanted to be a statesman, a rationalist in his scientific experiments who otherwise was a pious Christian, a firm believer in the Christian revelation, he was torn by doubts, by anxieties, by feelings of guilt. Soon after the death of his beloved first wife he began writing a diary, fragments of which were published after his death.[4]

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[4] The original manuscript seems to be lost.

It is a terrifying document of a man who, while he was showered with all the honors that the world could give, was deeply suffering and accusing himself bitterly of all his shortcomings and imperfections. The fact that he who had thundered against loose morals was living in sin with a servant girl, when his third marriage proved to be very unhappy, was a source of great anxiety to him to the end of his life. To us it makes him appear very human, not the pedantic moralist, not *l'homme à la petite queue* that La Mettrie attacked, but a warm-blooded human being, with ups and downs, with great qualities and with weaknesses, with great ambitions fulfilled and deep humiliations, a seeker after truth who like all true searchers was never quite sure that he was on the right path.

Short as it is, Beer's book is a real contribution to our understanding of Haller, and it would be futile to criticize a few minor points.[5] It seems strange that such an excellent book on Berne's greatest son was not published in Berne, or even in Switzerland but had to seek a publisher across the border.

HENRY E. SIGERIST

LEWIS MANSFIELD KNAPP. *Tobias Smollett, Doctor of Men and Manners*. Princeton: Princeton University Press, 1949. xiii + 362 pp. Ill. $5.00.

In 1771, when fifty years of age, Tobias Smollett reached the end of his arduous career, dying in Italy from tuberculosis and an intercurrent acute infection. His short lifetime encompassed enormous labors in medical practice, hack journalism, translations and ghost-writing, editorial and critical activity, and the compilation of a once-famous history of England: all this in addition to the authorship of five remarkable novels. But apart from his early naval service, so vividly reflected in *Roderick Random*, and the literary and legal squabbles which arose chiefly from his work for the *Critical Review*, his life was comparatively barren of incident; as far as the available records show, it was almost as deficient in drama as his own rather dreary plays. Professor Knapp, therefore, has little to offer of adventure or excitement and concerns himself chiefly with the depiction of Smollett's vigorous, thin-skinned, contentious personality. The author of *Humphrey Clinker* turns out, despite his faults of pride, obstinacy, jealousy and temper, to have been warm-hearted, generous and likeable; these kindly qualities and the fearlessness and independence which marked him from the first, are clearly shown. A "new" Smollett, or at least a Smollett less wildly eccentric, has been revealed by painstaking research over a period of some twenty years. The results of this research are set forth in competent and readable prose, and it is probable that this biography will long remain a standard work. Yet one must admit, as will appear to the most casual reader, that the author has sometimes left his tools lying about at the site of his excavations. As a single example, the bill for clothing, printed on page 24 and consisting of no less than twenty-seven items, is a useful scrap of evidence which is well utilized; but might not the bill itself have been reserved for the appendix? Similarly,

[5] Such as e. g. the spelling of Boerhave instead of Boerhaave, or that the book has no table of contents and no index.

the careful identification of totally unimportant persons, mentioned in Smollett's correspondence or in earlier biographies, is sometimes not worth the space devoted to it. On the other hand, where a question worth solving is posed and answered, the author's patience, ingenuity and fine historical sense comand full approbation. Even the most minor points of interest have been dealt with on the basis of very comprehensive study.

It is to be regretted that some of the most interesting questions are brought to our attention only in " A Concluding View of Smollett's Personality." The novelist was " a person repeatedly unconventional for his times in romantic self-confession " (p. 303) : " the complete personality of Smollett was not confined within the conventional moulds which shaped the typical rationalist and gentleman of his period " (p. 305). Here we should welcome a full discussion of the ways in which Smollett fitted the pattern of his time and the ways in which he transcended that pattern. To some extent the wish is gratified, and the seven pages of this penultimate chapter are among the most interesting in the book; more extended treatment of these matters, however, would doubtless have been relished by many of Professor Knapp's readers. That his readers will have a perdurable interest in the minutiae of eighteenth-century literary disputes is apparently assumed; incidentally, the degree to which these paper battles were themselves a matter of convention is touched upon but might have been discussed at greater length with some profit, even from the purely biographical viewpoint. The rich detail of this thorough and scholarly work forms an excellent picture of certain aspects of the era with which it deals; it seems at least possible that extraneous information of a more or less general character might have thrown a sharper light on the central personality.

Smollett is perhaps the best example of the not uncommon association in eighteenth-century England of literary and medical activity. (How did the prestige and social status of the successful author compare with those of the successful physician or surgeon? Smollett, Armstrong, Akenside and other literary lights of the medical fraternity might well be studied from this point of view.) Long an important source for the social and medical historian, Smollett is here considered in his dual rôle in a most interesting and informative manner. His relationship with William Hunter is carefully explored. If the genesis of the attacks from which he defended the older Hunter is not fully revealed, this cannot be counted as a defect in a biography of Smollett. In the same way, the novelist's friendships, and, typically, his quarrels, with other members of the medical profession receive adequate attention. The background of his medical satire, the juxtaposition of truth and caricature, has not been a necessary part of the biographer's business; students of such questions, none the less, must not neglect these fully documented pages.

Professor Knapp's scholarly objectivity can hardly be the subject of complaint. It is maintained impeccably throughout the book. One may nevertheless suspect that a warm partisan or bitter critic of Smollett, although presenting a distorted picture, might have preserved a little more of the essential Smollettian gusto. And what of the humour for which Smollett is famous? On this point we can easily be too exacting. Whoever laughed over a biography of Dickens? If there is little humour in *Tobias Smollett* the reason seems to be that Smollett was basically a serious critic of his times, a satirist and moralist. " Doctor of Men and Manners "

is an apt designation, and laughter was only one ingredient of Smollett's complex and artful prescription. It is quite probable that there is humour enough in these pages to represent him as he was. For the rest, and for the other special qualities of any first-rate author which no critic or biographer can do more than suggest, we must turn to his own writings. Meanwhile, there is no student of Smollett, of the English novel, of the social life of the eighteenth century, or of medical history, who will not be grateful to Professor Knapp for two decades of skilled research and the writing of an admirable biography. To readers of the *Bulletin*, the sections which set forth Smollett's relations with Smellie, Cullen and the Hunters will be of particular interest, as well as the passages on the low estate of Scottish medical degrees at the time, on medical education in general, and on Smollett's satirical views of the whole medical scene. (These views are not limited to *Roderick Random* but are found in other novels, particularly in *Count Fathom*.) One has the impression that medical historians have heretofore made too little use of the contemporary reception of medical works as seen in the files of such general literary periodicals as the *Critical Review* and *Monthly Review*, where these works were analyzed at length. In the eighteenth century medicine was not yet characterized by that isolation from the general province of humane and literary studies which was to overtake it as it grew more scientific; it is a useful, if incidental, service of this excellent book to show once again how much may be missed by limiting investigation in medical history to exclusively medical sources.

LLOYD G. STEVENSON

FRANZ L. SCHLEYER. *Die Stigmatisation mit den Blutmalen*. Hannover: Schmorl & von Seefeld Nachf., 1948. 154 pp. D. M. 5.00.

The author of this booklet is interested in a medical analysis of the syndrome of stigmatization ("Stigmatisationssyndrom," p. 5), including sanguineous lacrimation and hematidrosis. With this aim in mind he presents abstracts from the biographical material, stressing the morphological aspects of the stigmata as well as psychopathologic features and somatic disturbances. These biographical excerpts represent the bulk of the booklet. Any historical analysis relating the somatic phenomena with religious and cultural events of the time is purposely excluded. From the medical point of view, however, the book offers hardly any new insight. The author's own conclusions are relatively short since he realizes that previous opinions by theologians and medical men, which he reviews in chapters IV and V, have said most of what can be said on the subject. The book had best be approached as a convenient (though not exhaustive) collection of historical case material, accompanied by a review of some of the literature on the subject.

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